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107-19 CIVIL LAW DEPOSITION
RECEIVED AFTER OCTOBER 3, 2001

East Poplar Oil Field
Refinement Case

DEPOSITION - SIDNEY CAM

Region 8



13555

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MONTANA
BILLINGS DIVISION

CARY G. YOUPEE; D. DWIGHT
YOUPEE; JOSI YOUPEE; RENE
MARTELL; MARVIN K. YOUPEE, SR.,
individually and as represen-
tative and next friend of
MARVIN YOUPEE, JR., WILLIAM
YOUPEE III, IRIS YOUPEE, and
BRITTANY YOUPEE; EUGENE ABBOTT;
MARGARET ABBOTT; CHARLES FOUR
BEAR, individually and as
representative and next friend
of JORAY FOUR BEAR, JONATHON
LITTLE WHIRLWIND, AVA LEE
LITTLE WHIRLWIND and CHARLES
FOUR BEAR II; ANNA FOUR BEAR;
GEORGE F. RICKER, SR.; HELEN
RICKER; GEORGE F. RICKER, JR.;
individually and as represen-
tative and next friend of ERIN
RICKER; WILLIAM T. RICKER;
ABIGAIL REDDOOR; IRMA REDDOOR;
LAURA BLEAZARD, individually
and as representative and next
friend of DAVID BLEAZARD; ROSS
BLEAZARD; ERICA BLEAZARD;
TRIVIAN GRAINGER, individually
and as representative and next
friend of DANIEL GRAINGER and
ADAM GRAINGER; DAVID GRAINGER;
DAWN GRAINGER; DENISE GRAINGER,
individually and as represen-
tative and next friend of
JORDAN GRAINGER, JAY GRANDCHAMP
and TINA KOHL; DONNA BUCKLES-
WHITMER; WARREN WHITMER; and
ALLEN YOUPEE,

Plaintiffs,)

v.)

MURPHY EXPLORATION & PRODUCTION
CO., a Delaware corporation;
MESA PETROLEUM CO., a Delaware
corporation; PIONEER NATURAL
RESOURCES USA, INC., a Delaware
corporation; SAMSON HYDRO-
CARBONS COMPANY, an Oklahoma

CV-98-108-BLG-JDS

DEPOSITION OF
SIDNEY CAMPBELL

1 corporation; MARATHON OIL, an)
 2 Ohio corporation; and JOHN DOES)
 10 through 50,)
 Defendants.)

3 _____)
 4 MESA PETROLEUM and PIONEER)
 5 NATURAL RESOURCES USA, INC.,)
 Defendants/Third-Party)
 Plaintiffs and)
 6 Cross-Plaintiffs,)

7 v.)

8 AMARCO RESOURCES CORP.; BESTWAY,)
 9 INC.; WESTDALE PETROLEUM, INC.;)
 and THE PRUDENTIAL GROUP,)
 Third-Party Defendants,)

10 v.)

11 JOHN DOES 4-50,)
 Cross-Defendants.)

12 _____)
 13
 14 DEPOSITION

15 OF

16 MR. SIDNEY W. CAMPBELL,

17 called for examination by counsel for plaintiffs at
 18 the Crowley Law Firm, 500 Transwestern Plaza II,
 19 490 North 31st Street, City of Billings, County of
 20 Yellowstone, State of Montana, commencing at 09:07:25
 21 on Thursday, July 12, 2001.

APPEARANCES

For the Plaintiffs:

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For the Defendant
Murphy:

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REPORTER'S NOTE: "Uh-huh" and "Um-hmm"
indicate affirmative responses. "Huh-uh" and "Hm-mm"
indicate negative responses.

5

7

PROCEEDINGS

MS. OSTBY: Maybe I should just put on the record that I spoke with plaintiffs' counsel before the deposition began and indicated that Mr. Campbell will be the 30(b)(6) witness for Murphy. We had previously indicated that there would be two witnesses, and Mr. Campbell is able to address the matters that are set forth in the notice, so we'll proceed with Mr. Campbell as Murphy's 30(b)(6) witness.

MR. GALLIK: Thank you.

WHEREUPON,

MR. SIDNEY W. CAMPBELL,

called for examination by counsel for plaintiffs, after having been first duly sworn to testify the truth, the whole truth, and nothing but the truth, testified as follows:

EXAMINATION

BY MR. GALLIK:

Q Mr. Campbell, could you please state your name and address for the record?

A Sidney W. Campbell, [REDACTED],
New Orleans, Louisiana.

Q What is your occupation?

A I'm a petroleum engineer.

6

8

Q Okay. And for whom do you work?

A I work for Murphy Exploration and Production Company.

Q In terms of your educational background as a petroleum engineer, could you summarize that, please?

A Louisiana Tech graduate, petroleum engineering, B.S., 1975. Professional engineer, and I have worked with Murphy since December of 1975.

Q Have you worked with Murphy in the New Orleans office during that entire time?

A No -

Q Where -

A - since 1991.

Q Okay. Prior to 1991, where did you work for Murphy?

A I worked for Murphy starting in El Dorado, Arkansas from '75 until spring of '77. Worked in Poplar '77 until about June of '78. Back to El Dorado as a reservoir engineer until 1981 and stayed in El Dorado as a production operations engineer from '81 until '87. And I was in Silsbee, Texas, just north of Beaumont, '87 until about mid '89. Back to El Dorado, and I was there from middle of '89 until July of '91. Moved to New Orleans.

Q Do you have any kids?

A Yes.

Q Like all the moves?

A Two girls.

Q When you said Poplar -

A It's tough on kids.

Q It is.

When you mentioned earlier that you were in Poplar from sometime in 1977 to June of '78, would that be Poplar, Montana?

A Poplar, Montana, yes, sir.

Q And what was your responsibility in Poplar?

A I was a field operations trainee, technician.

Q And when you say you were a field operations trainee and technician, what does that involve?

A Just involves doing a little operations training in the fields, or in what our foremen do in the field.

Q In terms of the oil and gas wells? Is that what we're talking about?

A Yes, oil and gas wells.

Q Saltwater disposal wells?

A Yes, sir.

Q Right now, you're a petroleum engineer, I understand, with Murphy, and when we talk today about Murphy, I understand there are various branches of Murphy; is that correct?

A Yes, sir.

Q Okay. And there have been various changes in corporate ownership over the years; is that correct?

A Not so much in corporate ownership but in the subsidiaries of the corporation.

Q Okay. When I talk about Murphy, I'm talking about the oil production -

A Yes, sir.

Q - and exploration company -

MS. OSTBY: Wait until he finishes his question.

THE DEPONENT: Yes, ma'am.

BY MR. GALLIK:

Q - just so we're clear on that.

In terms of your duties as a petroleum engineer right now, what are those?

A I am the manager of onshore operations and the manager of joint-interest operations for Murphy Exploration.

Q In terms of Murphy's onshore operations, generally where does Murphy conduct onshore operations?

A Currently we conduct operations in Montana, Louisiana, Mississippi, and the Gulf of Mexico.

Q And those are petroleum operations?

9

1 A Yes, sir.

2 Q Okay. In terms of your joint operation

3 responsibilities, where generally are those operations

4 conducted?

5 A Almost exclusively, right now, in Louisiana and

6 the Gulf of Mexico.

7 Q And when you say "joint operations," Murphy is

8 working with another company?

9 A Yes, sir.

10 Q Okay. Is Murphy working with any other

11 defendants in this case in any of those joint

12 operations that you're aware of?

13 A No, sir.

14 Q So is it fair to say that for the most part of

15 your career since graduating from college, you've

16 worked for Murphy, then?

17 A Yes, sir.

18 Q Okay. Have you had your deposition taken before?

19 A Yes, sir.

20 Q As a corporate representative?

21 A Yes, sir.

22 Q Okay. How many times, approximately?

23 A Probably once as a corporate rep. Two other

24 times just as a witness.

25 Q Okay. In terms of a corporate rep, what were

10

1 generally the circumstances of the allegations of the

2 complaint or the lawsuit that you were involved with?

3 A The lawsuit was a preferential rights case over

4 some properties with ORYX out of Dallas.

5 Q Okay. Have you ever testified before on behalf

6 of Murphy where there was an allegation that

7 groundwater was contaminated with hydrocarbons or

8 byproducts of oil and gas exploration?

9 A No, sir.

10 Q Did you have an opportunity to review any

11 documents before the deposition today?

12 A The only thing I reviewed was the responses to

13 the interrogatories.

14 Q That bear your signature?

15 A Right.

16 Q In terms of your employment in Poplar, you were

17 there for approximately how many months, would you

18 estimate?

19 A Nine or ten months.

20 Q Okay. And during that time did you live in

21 Poplar or Wolf Point?

22 A I lived in Poplar.

23 Q Okay. Now as I understand it, Murphy has been in

24 eastern Montana or northeastern Montana for a number

25 of years; is that correct?

11

1 A That's correct.

2 Q Approximately how many years, if you know, has

3 Murphy been there?

4 A To the best of my knowledge, since 1950 or '51,

5 the discovery of that East Poplar Field.

6 Q Aside from the East Poplar Oil Field, are you

7 aware of Murphy having any other operations in

8 Montana?

9 A Yes.

10 Q Okay. Where would those be?

11 A We had operations north of Wolf Point in what we

12 call the Tule Creek Trend. And we had some operations

13 over in the, I think it was, Blackfoot Reservation

14 area, Blackfoot Field, maybe, and I think that was out

15 of Cut Bank, maybe.

16 Q So those three general areas?

17 A Three general areas, yes, sir.

18 Q Have you had a chance to review any of the

19 depositions that have been taken in this case of other

20 corporate representatives?

21 A No, sir.

22 Q Okay. In terms of this lawsuit, what does the

23 term "pollution" mean to you, just in general?

24 A "Pollution" has a lot of different variations or

25 connotations. I don't really – I guess I don't

12

1 understand what you're asking.

2 Q Does "pollution" have – does the word

3 "pollution" have any particular meaning for you?

4 A "Pollution" means that there is some product in

5 another product that you don't particularly want in

6 that product.

7 Q Okay.

8 (Exhibit 61 was marked for identification.)

9 BY MR. GALLIK:

10 Q Mr. Campbell, I have marked as Deposition Exhibit

11 No. 61 Murphy Exploration and Production Company's

12 responses to plaintiffs' second discovery requests,

13 and to the best of my knowledge, it's everything that

14 was provided to me by your counsel. And attached as

15 an exhibit or an attachment – it would be at the

16 back, Carolyn – is the operating procedure for

17 Murphy, April of 1988, concerning environmental laws

18 and policies for Murphy.

19 I just ask that you take a look at that first

20 paragraph if you would, sir.

21 MS. OSTBY: Brian, I'm confused about your

22 statement that this is everything that's been

23 produced.

24 MR. GALLIK: For that second set of

25 discovery responses.

13

1 THE DEPONENT: The first paragraph being the
2 policy paragraph?
3 BY MR. GALLIK:
4 Q That's correct, yes.
5 1988, Carolyn.
6 (Pause.)
7 THE DEPONENT: Okay.
8 BY MR. GALLIK:
9 Q Okay. Have you seen this particular document
10 before?
11 A Yes.
12 Q And what is it?
13 A It's an environmental policy.
14 Q Okay. For Murphy?
15 A For Murphy-Oil Corporation.
16 Q Okay. And when we're talking, again, about
17 Murphy Oil Corporation, are we talking about the
18 exploration company as well?
19 A That's correct.
20 Q So this was the policy in effect in at least
21 April of 1988 with respect to environmental laws and
22 regulations; is that correct?
23 A Compliance with laws and regulations.
24 Q The company's environmental policy; is that fair?
25 A Yes, sir.

14

1 Q Okay. And that policy, in part, talks about
2 committing the company "to fully comply with all rules
3 and regulations relating to the environment and to
4 conduct its operations in a way which prevents
5 significant pollution or interference with the
6 environment."
7 Did I read that part correctly?
8 A Yes, sir.
9 Q Okay. So in terms of pollution, from the
10 standpoint of Murphy, is your definition that you
11 provided me earlier today the same definition we're
12 talking about here in this policy?
13 A It would be, yes.
14 Q Okay. And what's the difference between
15 "pollution" and "interference with the environment"?
16 A I'm not sure that I could fully define that for
17 you, but "pollution" would be putting a product into
18 either air, water, or other environment that was not
19 there originally, was not there naturally, or was
20 above or beyond the natural scope of that particular
21 product in the environment.
22 Q Okay. And from the discovery that you have in
23 your hand there, which is part of what's been produced
24 by Murphy in this case, I take it Murphy does have an
25 environmental policy, correct?

15

1 A Yes.
2 Q Okay. And as we sit here today, can you tell me
3 what that policy is?
4 A This is the basic policy. I think it's been
5 updated, but this is the basic policy.
6 Q Is to prevent pollution?
7 A That's correct.
8 Q Okay. Is that policy with respect to preventing
9 pollution the same for groundwater?
10 A It would be, yes.
11 Q Okay. Now the first sentence of that same policy
12 paragraph states that, "The company has had a
13 long-standing policy of complying fully with all the
14 environmental laws and regulations and to promote a
15 safe and clean environment for its employees and the
16 community."
17 Is that a fair statement of the policy that I've
18 read?
19 A I think that's an exact quote of the policy.
20 Q Okay. And from your perspective, do you know how
21 long that policy has been in effect for Murphy?
22 A I don't know how long this policy has been in
23 effect, but the policy of Murphy has always been to
24 comply with the rules and regulations, whether they be
25 environmental or legal or operational requirements

16

1 from the regulatory agencies that control oil and gas.
2 Q And has it always been the policy, to your
3 knowledge, of Murphy to conduct its operations in a
4 way that prevents pollution?
5 A In a way that would attempt to prevent pollution,
6 yes, sir.
7 Q Okay. And that long-standing policy, I take it,
8 would apply to groundwater as well?
9 A Yes, sir.
10 Q Okay. So it's fair to say that at least since
11 Murphy has been in Montana in the 1950s, it's been its
12 policy to comply with environmental laws?
13 A To comply with the laws that existed at the time.
14 Q And also the policy to conduct its operations in
15 a way that it doesn't cause pollution?
16 A That's correct.
17 Q Okay. I have a question concerning again that
18 last sentence of Murphy's policy. I'll summarize it
19 to get to the end there. It says to conduct itself
20 "in a way which prevents significant pollution or
21 interference with the environment."
22 I'm curious about the use of the word
23 "significant." Can you explain to me what
24 "significant pollution" means?
25 A Well, the only way I can explain it would be that

17

1 we, as individuals and as companies, as we go about
2 our daily business, there's nothing that we can do
3 that doesn't alter the environment to some degree,
4 whether it's driving a car or whether it's operating
5 an electric motor or a pump or a gasoline engine or
6 whatever. Everything we do has some effect on the
7 environment.

8 Most of those are not significant events, not to
9 alter the environment. There are events that are
10 significant enough to alter small individual areas of
11 the environment. You know, whether even those
12 significant events alter the environment, of what we
13 know as the world environment, I'm not sure that
14 anybody understands all of that. But "significant"
15 would relate to significant events to a particular
16 area as we're discussing the East Poplar Field.

17 Q So by way of example, if someone is no longer
18 able to drink the water from under their ground
19 because of pollution, would that be significant
20 pollution?

21 A Not necessarily, no.

22 Q Okay. Why not?

23 A There's alternate methods of providing water
24 which may not make that a significant event.

25 Q Okay. So it depends upon the circumstances,

18

1 whether an aquifer is polluted, whether that
2 becomes – strike that.

3 So it depends upon the circumstances whether an
4 aquifer that supplies drinking water and becomes
5 polluted is a significant pollution or not?

6 A I guess it would depend on what you would define
7 as pollution. I mean, there's different types of
8 products that could be introduced into groundwater
9 that wouldn't necessarily be considered harmful.

10 Q Okay.

11 A And whether you classify that as pollution, you
12 know, or whether you want something as harmful being
13 pollution, whether it makes someone sick or – I mean,
14 there's different definitions for "pollution."

15 Q Okay. And if the water cannot be consumed by
16 human beings because of the introduction of a foreign
17 substance, would that be significant pollution?

18 A It could be, yes.

19 Q It could be?

20 A Yes.

21 Q It could not be?

22 A Could not be.

23 Q Okay. And when would it not be significant
24 pollution?

25 A If alternate forms of water could be provided

19

1 that would make that resident or life equal or the
2 same as what they had. I'm not sure that it would be
3 a significant event.

4 Q Okay. So provided – well, strike that.

5 If that water is the individual's sole source of
6 drinking water, would that, then, be significant
7 pollution?

8 A Yes.

9 Q When Murphy conducts oil and gas exploration or
10 production activities prior to conducting those
11 activities, does it do an investigation as to whether
12 or not the water that the people in the area receive
13 is the only source of water for those people?

14 A Typically, no, not on a specific basis, but when
15 we drill a well, we have to be aware of where the
16 groundwater table is and then also where the
17 freshwater wells are surrounding our wells, and we
18 have to then protect those by setting casing deep
19 enough to protect the environment.

20 Q Okay. So in terms of how Murphy conducts its
21 operations with respect to exploration and production,
22 it doesn't first do an analysis as to whether it's the
23 sole source of drinking water before it begins
24 drilling or producing?

25 A No, sir.

20

1 Q In all cases, it would be fair to say that Murphy
2 tries to conduct its oil and gas operations to prevent
3 any pollution of groundwater, correct?

4 A That's correct.

5 Q Does Murphy's policy with respect to pollution
6 have any, aside from your testimony that there can be
7 both significant and nonsignificant pollution, have
8 any other different applications? For example, does
9 Murphy conduct its operations any differently in a
10 wilderness area as opposed to the plains of eastern
11 Montana?

12 A There are certain areas, primarily federal and/or
13 state properties, which have sometimes more stringent
14 regulations for operations within that environment.
15 Most of the time it deals with surface issues of
16 reforestation or runoff on that property.

17 Q So in terms of Murphy, then, if there's a
18 stricter environmental rule or regulation imposed as a
19 result of government action, it will follow – it's
20 Murphy's policy to follow that stricter regulation?

21 A Yeah. If you want to operate in that
22 environment, you have to follow those particular rules
23 and regulations.

24 Q Okay. No matter what the environment, be it an
25 Indian reservation or a wilderness area, it's still, I

21

23

1 take it, Murphy's policy not to cause significant
2 pollution; is that correct?
3 A That's correct.
4 Q From your experience in the oil and gas industry,
5 is it possible for oil and gas exploration and
6 production to cause pollution to groundwater?
7 A Repeat the question.
8 Q Sure. From your experience as an engineer in the
9 petroleum industry, is it possible for oil and gas
10 exploration and production to cause pollution to
11 groundwater?
12 A Yes.
13 Q And it's also possible, I take it, for oil and
14 gas exploration and production to be accomplished
15 without polluting groundwater, right?
16 A That's correct, yes.
17 Q Has there ever been a time, to your knowledge, in
18 the oil and gas industry where it has been impossible
19 to conduct those activities without polluting
20 groundwater?
21 MS. OSTBY: Could you read that back?
22 MR. GALLIK: I'll rephrase the question.
23 BY MR. GALLIK:
24 Q Has there ever been a time, to your knowledge,
25 that it has been impossible to conduct oil and gas

1 early '50s?
2 A Well regulation started changing in the late '50s
3 related to disposal operations, injection operations.
4 Handling water became more of an issue as the large,
5 giant fields in this country started producing large
6 quantities of water and how to deal with it. So, I
7 mean, we have learned as an industry how to manage
8 these things better with time.
9 Q A couple weeks ago we took the deposition of a
10 representative of another oil company, and he provided
11 me his definition of what a prudent operator is in the
12 oil industry. Does that have any meaning to you, the
13 words "prudent operator"?
14 A A prudent operator --
15 MS. OSTBY: He just asked, Does it have any
16 meaning to you? The answer is yes or no, it does or
17 it doesn't.
18 THE DEPONENT: Yes, it does.
19 BY MR. GALLIK:
20 Q What is that meaning?
21 A It means an operator that treats all of his
22 working interest owners, landowners, and regulatory
23 agencies in a fair manner, or according to the
24 agreements or contracts that he has, and operates his
25 production in a safe manner for his employees. I

22

24

1 operations without pollution to groundwater?
2 A Oh, I think so, yeah --
3 Q Okay.
4 A -- in the early days of exploration. I mean, the
5 science of drilling was not extremely well known.
6 Groundwater issues probably were not an issue in
7 certain points in time, and, you know, well control
8 issues become such that you hit a formation that has
9 the ability to float to the surface and you lose well
10 control.
11 In the early days of drilling on up into the
12 early '50s, you know, the science of drilling was as
13 much an art form as it was a science, and I think
14 there's always, you know, been certain environments
15 where it's probably impossible to drill and explore
16 without causing some groundwater contamination. And
17 in a sense, every well that drills through the
18 groundwater causes some isolated, small area of
19 groundwater contamination.
20 Q And when you testified, and correct me if I
21 misunderstood you, that -- did I hear you say up until
22 the early '50s it was more of an art than science?
23 A It's always been, and still, probably, as much an
24 art as it is a science.
25 Q Your reference to the early '50s, though, why the

1 mean, there's all kinds of connotations of "prudent,"
2 but it's one that takes care of his business, you
3 know, if you want to pin it down to a small
4 definition.
5 Q Does it also include being conscious of the
6 environment and taking steps to prevent pollution of
7 the environment?
8 A In today's world, it's becoming much -- you know,
9 as time has gone on, you know, you have to be a
10 prudent operator. You have to take care of the
11 environmental issues, whether it be air, water, or
12 whatever they may be.
13 Q You said in "today's" environment. Was there a
14 time when the definition of a prudent operator would
15 not include being conscious of the environments?
16 A Yes, sir.
17 Q And when would that be?
18 A I don't know when that transition would be, but,
19 I mean, it's been a transition from the early days
20 when, you know, we stored oil in pits on the ground
21 and we put water on the ground, because that was an
22 acceptable method of disposal, up until today when you
23 basically can't put any oil on the ground and very
24 little in the air, and saltwater is not to be disposed
25 of in any kind of freshwater stream, and we've got

25

1 underground ejection control regulations that are laws
2 that have been stipulated by the EPA. So the
3 transition has been a long one, but it's, you know,
4 it's gone from zero to where we are today.
5 Q In terms of Murphy's activities in the East
6 Poplar Oil Field since the 1950s, has it always been
7 conscious of the environment and worked to prevent
8 pollution of the environment?
9 A I would like to think that it was, and based on
10 my experience, it has been, yes.
11 Q So Murphy has been ahead of the curve with
12 respect to environmental protection and concerns
13 vis-a-vis the rest of the industry?
14 A I don't know that we would have been very far
15 ahead of the curve, but I would think, based on my
16 experience, that we've been slightly ahead of the
17 curve on that, yes, sir.
18 Q So in terms of a definition of a prudent operator
19 being one that takes steps not to pollute the
20 environment, Murphy has been a prudent operator in the
21 East Poplar Oil Field?
22 A Yes, sir, and let me digress just a second, if
23 you would.
24 Mr. Murphy, who was one of the founders of the
25 corporation -- the origin of Murphy is from the land

26

1 and timber business and had maintained a farm and
2 timber business up until about three years ago, when
3 they split that company off into a separate subsidiary
4 company and it now stands on its own. But Mr. Murphy
5 always -- you know, his philosophy was to protect the
6 landowners and the farmers and the people that owned
7 the land because he was a landowner himself, and so we
8 were always slightly ahead of the curve. But, I mean,
9 that's just digressing a little bit.
10 MS. OSTBY: You're only permitted one of
11 those.
12 THE DEPONENT: Okay.
13 MS. OSTBY: You're taking your one
14 digression.
15 BY MR. GALLIK:
16 Q So as long as Murphy has been operating in the
17 East Poplar Oil Field as a prudent operator, it has
18 known that its production and exploration operations
19 have had the capability of causing groundwater
20 pollution?
21 A I can't say that, no.
22 Q Okay. Why not?
23 A Because I don't know what the thought processes
24 were or the knowledge was in the early '50s. I was
25 not around. And the science of disposal or the

27

1 methods of disposal and the accepted methods of
2 disposal have changed through the years.
3 Q Aside from the 1950s, early 1950s, has Murphy
4 known that its operations in the East Poplar Oil Field
5 could cause groundwater pollution?
6 MS. OSTBY: Well --
7 THE DEPONENT: Yes, sir, I think so.
8 BY MR. GALLIK:
9 Q How does a prudent operator make sure that its
10 operations -- when I say "operations," for
11 clarification I'm talking about oil and gas --
12 A Okay.
13 Q -- exploration and production.
14 How would a prudent operator make sure that its
15 operations are not causing groundwater pollution?
16 MS. OSTBY: I'm going to object that that's
17 too general. Go ahead.
18 THE DEPONENT: Well, I don't know what your
19 question, you know, is particularly related to. But
20 on a daily basis, you know, we monitor our pressures
21 of our disposal wells, which would be one of the
22 primary sources of saltwater contamination to either
23 the surface or eventually to the subsurface. And our
24 guys are trained and expected to monitor the pressures
25 and make sure that things are operating as we have

28

1 them designed, or they're expected to operate, and to
2 visually inspect things on a daily basis.
3 BY MR. GALLIK:
4 Q The monitoring of pressure as a basis of making
5 sure that your operations are not causing groundwater
6 pollution, how long has that been Murphy's policy to
7 check for ground -- or how long has it been Murphy's
8 policy to use pressure testing to make sure that there
9 is no groundwater pollution?
10 A I don't know that I can answer that question.
11 Q Okay. How about in the industry from your
12 experience? When did pressure testing become a means
13 of testing to see if there are any leaks in the
14 system?
15 A Pressure testing for casing integrity, I think
16 that came in with the EPA regulations. Had to be in
17 the late '70s, '77-'78 time period. Maybe as late as
18 1981 or '82. There was a period in the late '70s,
19 early '80s, when underground ejection controls were
20 implemented by the EPA through the state agencies,
21 primarily.
22 Q Okay. So that would have been during a time that
23 you worked with Murphy?
24 A Yes.
25 Q Prior to the start of pressure testing to test

29

1 the integrity of the casing -- is that what you just
2 said?
3 A Yes, sir.
4 Q -- what was the method used in the industry to
5 check to see that the casing was not leaking?
6 A There were different methods, but primarily
7 pressure test or some fluid. And I understand in
8 talking to some of our field personnel that we used to
9 use crude oil as an annular fluid to be able to
10 monitor when we had a leak on the back side, to check
11 either a tube leak or casing leak in a disposal well.
12 And, also, it was a preservative or a corrosion
13 inhibitor, in essence, you know, for the steel pipe.
14 Q So it served a couple of different purposes?
15 A It served a couple of different purposes.
16 Q So from your experience, if I understand it, with
17 Murphy, prior to pressure testing of casing, you heard
18 from other employees of the company that some type of
19 fluid, a crude oil, was used as a means of testing the
20 casing; is that correct?
21 A That's correct.
22 Q Okay. Any other way that you're aware of that
23 Murphy tested the integrity of the casing of either
24 saltwater disposal or production wells?
25 A There are other methods, but I'm not sure that,

30

1 you know, that they were used on a regular basis.
2 There are pipe inspection logs, but I'm not aware of
3 any particular, you know, policy that we had to
4 inspect casing on a regular basis.
5 Q Okay. Prior to the late 1970s? Is that what
6 you're saying?
7 A Yes.
8 Q Okay. So I'm clear, prior to the late 1970s,
9 you're unaware of any policy at Murphy to regulate and
10 inspect the casing? Is that what you said?
11 A No. When you define "policy," I mean, you know,
12 our normal operating procedure would have been to
13 monitor for casing problems when we were disposing of
14 water.
15 Q Do you know what the policy was with respect to
16 the crude oil that was used, how often the crude oil
17 would be used to test the casing?
18 A Testing, you know, in that sense is an ongoing,
19 daily operation. As long as there's no pressure or
20 there's normal pressure on the back side, then there's
21 nothing that's changed in that environment. You're
22 not looking for a problem.
23 Once you notice a change, then you're looking for
24 some potential problem, either a hole in the tubing or
25 a hole in the casing.

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1 Q Okay. Why did pressure testing become the
2 required means of testing the casing in the late '70s,
3 if you know?
4 A I don't know that I really know. I mean, I could
5 speculate, but that would be speculation.
6 Q From your experience in the industry, is pressure
7 testing a more accurate means of testing for the
8 integrity of the casing as opposed to the crude oil?
9 A Probably would be more accurate, yes.
10 Q And why is that?
11 A Well, if it's a closed system or closed cylinder
12 and you put pressure on it, it maintains a set
13 pressure that you put on it, then it's sealed and
14 there's no way for the water, saltwater, to go
15 anywhere except where you've perforated to dispose of
16 that water.
17 Q Okay. And with the use of the crude oil method
18 you were talking about before, is it possible, then,
19 for there to be certain leaks in the casing that may
20 not be perceptible?
21 A Not significant leaks, no.
22 Q Okay. And what is a significant leak?
23 A That would be hard to define, but something that
24 would lose, you know, a large volume of fluid on a
25 daily basis such that you would notice that pressure

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1 drop, maybe even 50 pounds to 100 pounds of pressure
2 drop in that system.
3 First you'd have to determine if the pressure
4 drop occurred in your injection interval, and then
5 you'd have to determine if the pressure drop had
6 occurred somewhere else. But if you circulated water
7 to the surface while you were injecting, then you had
8 a hole in the tubing and you were circulating your
9 oil, you know, back to the surface, and then when you
10 pulled the tubing, you would still have some oil below
11 where your hole in the tubing was.
12 So, I mean, it was an art to try to determine,
13 but that was, you know, that was one method that they
14 could use.
15 Q You were just talking about the crude oil method?
16 A Yes.
17 Q Okay. And you jumped quickly into some technical
18 language and lost me there, so I have to follow up
19 with a few questions.
20 A (Nodded head affirmatively.)
21 Q You threw out 50 to 100 pounds of pressure.
22 A (Nodded head affirmatively.)
23 Q For a lay person like me, if you have a leak that
24 would result in a loss of 50 to 100 pounds of
25 pressure, is there any way of quantifying, in gallons,

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1 what that would represent?
 2 A No, sir, I don't think so.
 3 Q Okay.
 4 A It may not be any.
 5 Q It may not be any?
 6 A It may not be any. It may be, you know, a large
 7 quantity and manageable quantities of 10 or 15 barrels
 8 a-day. There's no way to determine because flow rate
 9 is not determined strictly by pressure.
 10 Q So from the sounds of it, if you have pressure
 11 testing that's able to test, it sounds like, fairly
 12 accurately the integrity of the casing, the crude oil
 13 method, from the way I understand it, it sounds like
 14 you could or could not know what is actually happening
 15 below the surface just by virtue of a loss of
 16 pressure; is that correct?
 17 A I don't know that I understand the question.
 18 Q It was probably pretty poorly asked.
 19 The crude oil method sounds to me like it was --
 20 you used the word "art" --
 21 A Right.
 22 Q -- as opposed to science. It sounds to me like
 23 you could have leaks going on below the surface with
 24 the crude oil method and you may not even know about
 25 it?

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1 A It's possible.
 2 Q And you may have some significant leaks and still
 3 not know about it?
 4 A I disagree with that.
 5 Q Okay.
 6 A I think if you had a significant leak, you would
 7 notice it, and it would probably be for a short period
 8 of time.
 9 Q Okay. Is it a significant leak if you have,
 10 let's say, a small leak that goes on for several
 11 years? Would that be a significant leak over time?
 12 A Not necessarily, no.
 13 Q Why not?
 14 MS. OSTBY: I'm going to object because
 15 there's no context. It's undefined, it's ambiguous,
 16 and, I think, unintelligible as asked. No disrespect
 17 intended. I just think it's an overly broad question
 18 and ambiguous, and I object.
 19 BY MR. GALLIK:
 20 Q Do you want me to rephrase the question?
 21 A Yes.
 22 Q I'm just trying to get some perspective on this
 23 crude oil method as a means of testing integrity or
 24 checking for subsurface leaks in your casing.
 25 A (Nodded head affirmatively.)

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1 Q And the best benchmark I have so far is --
 2 correct me if I misheard you -- is if you have a drop
 3 of 50 to 100 pounds of pressure, is that a good sign
 4 that you've got a problem?
 5 A That was a reference to an amount, and pressure
 6 loss is -- you would be looking for maybe percentages
 7 of pressure loss that would indicate that your
 8 injection pattern had changed from the normal,
 9 whatever that normal happens to be.
 10 And, you know, disposal wells are much like any
 11 other individual either asset or piece of equipment or
 12 person. Each one is an individual, and each one has
 13 its own specific characteristics, and, you know, you
 14 could be disposing water at 200 pounds. You could be
 15 disposing water at 500 pounds. If you're disposing at
 16 500 pounds, a 50-pound pressure drop is probably not
 17 significant. If you're injecting at 100, a 50-pound
 18 drop probably is significant.
 19 So it's all relative, and you have to have the
 20 knowledge and understanding, I guess, and a little bit
 21 of maybe engineering and operations experience to know
 22 when something has significantly changed, and that
 23 comes about by people being familiar with the
 24 equipment, being familiar with the downhole, and being
 25 familiar, you know, with pressure flow, pressure

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1 drops, and characteristics of the equipment.
 2 Even, you know, pressure drops can be caused by
 3 changes in the surface equipment valves that wash out,
 4 things that circulate at the surface that shouldn't be
 5 circulating. So pressure drop itself is not a
 6 significant event unless the pressure drop is isolated
 7 to a downhole environment, and then only if it's
 8 significant in the amount of pressure, and that's all
 9 relative.
 10 There's things that cause pressure drop. You can
 11 have scale buildup in the perforated area, scale
 12 buildup in the tubing. That scale can break loose and
 13 you're back to normal operations and you get a
 14 pressure drop in your injection, but it doesn't have
 15 anything to do with a loss in integrity of your
 16 disposal well.
 17 So all of those things -- and that's the reason I
 18 say it is as much an art as it is a science, but
 19 there's science involved, and then there's operations,
 20 which is the art form, in which you have to learn and
 21 your people have to be trained to try to keep up with
 22 this.
 23 And there's no perfect system. Even the casing
 24 integrity test that the EPA uses is not a perfect
 25 system, but it's the best we know of today, and at the

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1 times that we were operating, Murphy tried, and did
2 its best, to maintain the integrity of those disposal
3 wells so that the water went –
4 MS. OSTBY: Do you have in mind his
5 question?
6 THE DEPONENT: No.
7 BY MR. GALLIK:
8 Q That's okay. That's fine. You can continue on.
9 A (No response.)
10 Q Is it fair to say, from the explanation that you
11 provided me, that the old pre-pressure-testing method
12 of determining whether you have casing leaks relied
13 more upon the human being and that particular person's
14 experience in the oil industry than today when you use
15 the pressure testing required by EPA?
16 A I would say that's a fair statement, yes, sir.
17 Q All right. And under both systems, is it
18 possible to have leaks that go undetected?
19 A Is it possible? Yes.
20 Q And correct me if I misheard you, but the
21 pressure testing, would you agree, is a more accurate
22 means of ensuring the casing integrity is still there?
23 A Yes.
24 Q And that started in the late '70s; is that
25 correct?

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1 A It was regulated in the late '70s. I don't know
2 when – you know, there were times that we probably
3 tested the integrity prior to that.
4 Q Okay. From Murphy's standpoint, when did it
5 become the standard fare to use the EPA pressure
6 testing as required by EPA?
7 A In the late '70s.
8 Q Okay. And prior to that, generally you used what
9 I call the crude oil method?
10 A I don't know when, you know, the switch-over
11 would have been. There was a period in which we would
12 have been using packers and tubing, and typically when
13 you run a packer, you do test the back side of that,
14 which would be the annular space, and that would have
15 been, in essence, an integrity test.
16 EPA didn't think of integrity tests. Oil
17 companies had been doing oil integrity tests for
18 years, ever since they had been running packers. They
19 just adopted that method because that is a valid
20 method of testing the integrity, which is to put
21 pressure on that annular space.
22 So oil companies have been doing it for years.
23 Murphy did it since day one when they ran packers and
24 tested the back side of producing wells. So, I mean,
25 I don't have all of the history of disposal wells in

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1 Poplar, you know, and I'm not sure that anyone does,
2 but the accepted method was changed when EPA regulated
3 that you had to have packers and you had to test the
4 integrity.
5 Prior to that time, you did run systems without
6 packers because packers caused problems in pulling
7 wells and trying to monitor the downhole sometimes.
8 So there were reasons why they didn't run packers, and
9 a lot of them were operational issues.
10 Q Okay. Is the only way that an aquifer of
11 groundwater can be polluted with another contaminant
12 is the result of a leak in casing? Is that the only
13 way it can happen?
14 MS. OSTBY: Would you read that back,
15 please?
16 MR. GALLIK: Let me rephrase.
17 BY MR. GALLIK:
18 Q We've been talking about leaks in casing as a
19 source for causing groundwater pollution, correct?
20 MS. OSTBY: Have you?
21 THE DEPONENT: I'm not sure we have, and I
22 guess my question would be, "Pollution?" and ask you,
23 if you're defining "pollution" in this case, as what?
24 BY MR. GALLIK:
25 Q As, let's say, for example, saltwater entering an

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1 aquifer.
2 A Saltwater, yes.
3 Q Okay. Let's just assume –
4 A We'll assume that it's saltwater.
5 Q And one of the means saltwater can enter into the
6 aquifer is if there's a leak in the casing, correct?
7 A That's one way, yes.
8 Q What other ways are there for saltwater to enter
9 into an aquifer?
10 A Oh, I guess it can enter from the surface. It
11 can enter from naturally occurring fractures and
12 faults. It can occur from dissolution of marine
13 shales, you know, along the path of migration of the
14 water.
15 Q Which you have in your interrogatory answers.
16 In terms of the oil production and exploration
17 activities of an oil company, aside from casing leaks,
18 is there any other way that saltwater can contaminate
19 or enter into an aquifer?
20 MS. OSTBY: Any aquifer anywhere, at any
21 time, from any kind of well?
22 BY MR. GALLIK:
23 Q A fresh groundwater aquifer.
24 MS. OSTBY: Objection. Too general.
25 THE DEPONENT: Yeah, I don't know that I can

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1 answer that question. There are other methods, you
2 know. I mean, if you had a specific way, you know,
3 and asked me, I could probably tell you yes or no,
4 that it's possible, but, I mean, there are other ways.
5 BY MR. GALLIK:
6 Q How about if you have problems with cement
7 bonding on the outside of the casing?
8 A If you had problems with cement bonding, it would
9 depend on where you were injecting, how deep you were
10 injecting, how much formation probably was between the
11 injection interval and the groundwater, and maybe how
12 long the well had been there. But there are instances
13 where it has and it would be possible for it to
14 migrate through a channel between the cement and the
15 formation.
16 Q Okay.
17 MS. OSTBY: Can we take a break? We've been
18 going about an hour.
19 MR. GALLIK: Sure.
20 (Recess taken from 09:59:22 to 10:09:13.)
21 BY MR. GALLIK:
22 Q Mr. Campbell, in terms of log files or -- let me
23 back up.
24 "Well files," would that be a proper term for an
25 oil well that has been drilled and producing or

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1 abandoned? There's a record that's kept of that
2 particular well, isn't there, in paper terms?
3 A Yes, sir.
4 Q What's that called?
5 A We call it a well file.
6 Q Well file. And in terms of the well file for a
7 well since the late '70s when the EPA required
8 pressure testing of casing, would there be a record in
9 the well file of that testing?
10 A Yes.
11 Q Prior to the requirement of the EPA for pressure
12 testing, would there be, in the log file, the well
13 file, any record of testing the casing?
14 MS. OSTBY: I'm going to object to the
15 extent it calls for speculation, and this gets into
16 the subject matter of our objections to this
17 deposition in that you're asking him to span a total
18 of 50 years, or, in this particular question, maybe 20
19 or 30 years, for a hundred -- probably more than 50 to
20 100 wells, and it's just not possible for any person
21 to say, when they weren't even there, yes, that for
22 each well, each time, it was done. It's just
23 impossibly general, and that was the purpose for our
24 objection.
25 So I'm not going to tell him not to answer,

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1 but I am going to renew that objection with respect to
2 all of these questions, that the questions that ask
3 this witness to span such a large number of operating
4 wells and over such a long period of time are simply
5 too general and call for speculation.
6 BY MR. GALLIK:
7 Q Do you know?
8 A Repeat the question.
9 Q As I understand it, since the EPA -- let me ask
10 you a different question.
11 Does the EPA require that the records of pressure
12 testing be kept with the well file?
13 A I don't know that they require it --
14 Q Okay.
15 A -- but we do keep when we run an integrity test.
16 Q Okay. That's Murphy's policy?
17 A It is now.
18 Q Okay. And how long has that been your policy?
19 A I don't know.
20 Q Okay. Do you know if Murphy had a policy
21 regarding retention of records for casing testing
22 prior to the EPA requirement of pressure testing?
23 A No, I don't.
24 Q Okay. Do you know, from your experience -- you
25 started, what, in the mid '70s with Murphy?

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1 A Yes.
2 Q Do you know whether any records, from your
3 experience, were ever generated with respect to
4 testing of casing integrity through the crude oil
5 method?
6 A No.
7 Q You don't know?
8 A I don't know.
9 Q Okay. Is that something that you can even make a
10 record of from your experience in the industry?
11 A No. I never tested a well with oil.
12 Q Okay. So you don't know if it's possible to even
13 make a written record?
14 A No.
15 Q If a written record is kept, was it Murphy's
16 policy to put all of the records concerning a well
17 into the well file?
18 A I don't know that that's a policy. That would be
19 normal practice, but not necessarily a policy.
20 Q Okay. In order to conduct oil and gas
21 exploration or production, what steps does Murphy Oil
22 take prior to spudding the hole?
23 A (No response.)
24 Q For example, acquiring the property, a lease.
25 What are those general steps?

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1 MS. OSTBY: I'm going to object. Are you
2 talking about before they ever identify there's a
3 property they want to drill? I mean, that covers an
4 enormous amount.
5 BY MR. GALLIK:
6 Q Let's say you have some property you're
7 interested in drilling a well on because you think
8 there might be some oil or gas there. What general
9 steps does Murphy take to drill the well?
10 MS. OSTBY: Same objection.
11 THE DEPONENT: Acquire the lease.
12 BY MR. GALLIK:
13 Q And that lease would be acquired from the
14 landowner?
15 A Yes.
16 Q Okay. So let's say you have a lease now. What's
17 the next step?
18 A We would develop a drilling plan.
19 Q Is that drill plan reviewed by any regulatory
20 agency?
21 A Usually not, no.
22 Q Okay. That's an internal company document?
23 A Yes.
24 Q Okay. You develop a drilling plan. What's next?
25 A Hire contractors to drill the well.

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1 Q Do you need to secure any sort of permits from
2 any state or federal agency prior to drilling the
3 well?
4 A Yes.
5 Q Okay. In Poplar, what agencies would you get
6 permits from?
7 MS. OSTBY: Do you mean with respect to the
8 Poplar fields? Not in Poplar?
9 BY MR. GALLIK:
10 Q Poplar fields.
11 A Bureau of Land Management and the Montana Oil and
12 Gas Commission or board of oil and gas.
13 Q So of the people we've talked about, the
14 landowner, the contractors, the regulatory agencies,
15 whose responsibility is it to make sure that the oil
16 and gas operations that follow don't cause significant
17 pollution to the groundwater?
18 MS. OSTBY: Objection. Calls for a legal
19 conclusion. If you have an understanding, you can
20 tell him, but you're not qualified to give him a legal
21 opinion.
22 MR. GALLIK: I'm not asking for a legal
23 opinion, Mrs. Murphy.
24 THE DEPONENT: Bureau of Land Management
25 controls the surface environment, or the Montana Oil

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1 and Gas board, whichever property it happens to be on.
2 In the State of Montana, it is my understanding that
3 EPA controls subsurface environmental issues related
4 to injection and disposal.
5 BY MR. GALLIK:
6 Q Okay. Does Murphy Oil Company have any
7 responsibility to make sure that its operations don't
8 cause or contribute to significant groundwater
9 pollution?
10 MS. OSTBY: Object to the extent it calls
11 for a legal conclusion. Also, too general.
12 THE DEPONENT: We have a policy procedure
13 that tells us not to cause any significant pollution
14 or interference with the environment.
15 BY MR. GALLIK:
16 Q Okay. Would you agree with me that if an oil
17 company conducts its oil and gas operations in an
18 environmentally prudent manner, with a prudent
19 operator like Murphy, that the landowner, on whose
20 property the well is being operated, should assume
21 that his drinking water won't be adversely affected by
22 the operation?
23 MS. OSTBY: Objection. Calls for
24 speculation.
25 ///

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1 BY MR. GALLIK:
2 Q You can answer.
3 A No.
4 Q They should not assume that?
5 A No.
6 Q Why not?
7 A Well, accidents happen. Things happen. I mean,
8 they should, if there's oil and gas operations around,
9 they should be aware and try to protect themselves on
10 that property.
11 Q Okay. What steps should the landowner take to
12 try and protect themselves from the prospect that the
13 aquifer from which they get their drinking water won't
14 be significantly polluted?
15 A I'm not sure I understand the question.
16 Q Well, you just testified that the landowner
17 should take some steps to protect themselves. What
18 steps should the landowner take to protect themselves?
19 A Just monitor their water.
20 Q Okay. And how should they monitor their water?
21 A In the sense of talking about saltwater, it would
22 just be a matter of tasting the water. If it's
23 significantly high, it's going to taste like
24 saltwater.
25 Q So the landowner should taste the water to make

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1 sure it's not salty?

2 A In my opinion, yes.

3 Q Anything else that they should do?

4 A I don't know of anything else, no.

5 Q And the landowner should know that if the water
6 starts tasting salty, it's from oil production
7 activities?

8 A I don't know that they should know that it's from
9 oil production activities.

10 Q Okay. Anything else the landowner should do
11 besides tasting their water?

12 A Not that I know of.

13 Q If a landowner's groundwater is significantly
14 polluted by Murphy's operations, what action can the
15 landowner expect that Murphy would take to remedy that
16 situation?

17 MS. OSTBY: I object. Too general. Assumes
18 facts not in evidence, not established.

19 BY MR. GALLIK:

20 Q You can answer.

21 A Can you repeat?

22 MS. OSTBY: I'm not sure he can answer.
23 It's way too general.

24 MR. GALLIK: I don't think it is.

25 ///

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1 BY MR. GALLIK:

2 Q If someone's groundwater is contaminated by
3 virtue of your operations, they can't drink the water
4 anymore, what action should the landowner expect
5 Murphy to take?

6 MS. OSTBY: Also calls for legal conclusion.

7 BY MR. GALLIK:

8 Q Can you answer it? You can answer it.

9 MS. OSTBY: If you can. If you can't answer
10 it, tell him you can't answer it.

11 THE DEPONENT: I don't know that I can
12 answer the question.

13 BY MR. GALLIK:

14 Q I see. So you don't know whether Murphy should
15 clean up the mess it caused?

16 MS. OSTBY: Well, I object. It assumes
17 Murphy caused a mess, and there's no evidence in the
18 case that establishes that Murphy caused a mess.

19 THE DEPONENT: Right.

20 MS. OSTBY: I also object there's no
21 context. You haven't talked about the particular
22 well. You're just talking about some ethereal; if
23 Murphy caused something somewhere, for some reason, in
24 some way, to some landowner, in some context we don't
25 know, what should the landowner expect Murphy to do?

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1 It calls for speculation. It's overly broad and
2 ambiguous. It calls for legal conclusions. It's
3 simply not answerable, and I object to it.

4 BY MR. GALLIK:

5 Q Does Murphy have a policy about cleaning up
6 pollution that it causes?

7 A Not that I'm aware of, no.

8 Q Does Murphy have any policy with respect to
9 actions to be taken in the event its actions, its
10 conduct, causes significant pollution?

11 A Not that I'm aware of other than following the
12 guidelines or rules and regulations or things that are
13 stipulated by agencies.

14 Q Does Murphy have a policy for cleaning up spills
15 of oil or saltwater that impact the surface of the
16 ground around an oil well?

17 A There's no specific policy other than the policy,
18 the environmental policy we have, but we do follow the
19 state regulations for oil and grease content for
20 cleanup of surface spills, both oil and water.

21 Q Do you know what those regulations require?

22 MS. OSTBY: I object. It calls for legal
23 conclusion, to the extent that it does.

24 MR. GALLIK: I'm asking if he knows.

25 ///

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1 BY MR. GALLIK:

2 Q Do you know what those regulations require?

3 MS. OSTBY: You're asking what his
4 understanding may be?

5 THE DEPONENT: Yeah.

6 BY MR. GALLIK:

7 Q I'm asking whether you know or not.

8 A Yes, I do.

9 Q Okay. And what do those require?

10 A Each state has a different requirement.

11 Q Okay. Do you know what Montana's requirement is?

12 A Montana has no specific requirement. It's
13 typical in most states that 1 percent oil and grease
14 content is an acceptable landforming or remediation
15 effort.

16 Q In some states? Is that what you said?

17 A In most states.

18 Q In most states. And do you know what Montana's
19 is?

20 A I think Montana's is 1 percent, but I'm not sure
21 of that. But that information is easily available.

22 Q Oh, I understand. I'm just asking what you know.

23 A Right.

24 Q So is it fair to say that if the state or federal
25 rule or regulations requires certain action, that

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1 that's the action that Murphy is going to follow?
 2 MS. OSTBY: I object. He's already said
 3 it's Murphy's policy to adhere to rules and
 4 regulations, so it's been asked and answered.
 5 BY MR. GALLIK:
 6 Q I'm just trying to summarize.
 7 A Sometimes we do more than.
 8 Q All right. But at a minimum?
 9 A At a minimum, we do what the state or federal
 10 agencies require.
 11 Q Okay. With respect to oil and gas exploration
 12 and production, from your experience is it common to
 13 be operating in the same area where fresh groundwater
 14 aquifers exist?
 15 A Yes.
 16 Q Okay. Does Murphy have a policy, as part of its
 17 normal course of business, to locate freshwater
 18 aquifers prior to beginning oil and gas exploration
 19 and production?
 20 MS. OSTBY: That's been asked and answered,
 21 too. Go ahead.
 22 THE DEPONENT: No. Those are identified by
 23 most state agencies.
 24 BY MR. GALLIK:
 25 Q Okay. So the investigation that Murphy does

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1 would be, with respect to the location of pressure
 2 water aquifers, is what?
 3 A I don't understand the question.
 4 Q What is Murphy's policy with respect to locating
 5 freshwater aquifers in the area where it's planning on
 6 drilling?
 7 A We don't have to locate them.
 8 Q Okay.
 9 A The state agencies have already located those and
 10 have identified those and require permits to protect
 11 those.
 12 Q Okay. So what Murphy would do, then, is go to
 13 the appropriate state or federal agency –
 14 A (Nodded head affirmatively.)
 15 Q – and get the documentation concerning the
 16 location of the aquifer?
 17 A Yes.
 18 Q Now with respect to the East Poplar Oil Field, we
 19 have in front of us Deposition Exhibit 51. Have you
 20 seen this before, sir?
 21 A I've seen one similar to this, yes.
 22 Q Okay. Is it fair to say that this is a map in
 23 general of the East Poplar Oil Field?
 24 A It is a topo map that covers an area that
 25 probably encompasses East Poplar Field, yes.

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1 Q Okay. Is the East Poplar Oil Field larger than
 2 this, that's shown on the map?
 3 A Not to my knowledge, no.
 4 Q Okay. From reading the discovery in this case,
 5 it's my understanding that Murphy currently has active
 6 oil and gas leases in the East Poplar Oil Field; is
 7 that correct?
 8 A That's correct.
 9 Q Okay. Do you know – I don't know. Do you know
 10 if there are any freshwater aquifers located beneath
 11 any of the wells that Murphy is currently operating?
 12 A I'm not sure. You'd have to define "aquifer,"
 13 but there are some freshwater sands beneath the East
 14 Poplar Field –
 15 Q Okay.
 16 A – although they're very poor.
 17 Q Okay. When you say that they're – I have to
 18 define "aquifer," but you said that there are sands;
 19 is that correct?
 20 A Yes.
 21 Q Okay. When you use the word "sands," is that an
 22 area from which water can be derived?
 23 A Yes.
 24 Q And what's the difference between a sand and an
 25 aquifer?

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1 A I'm not sure that there would be a lot of
 2 difference, but an aquifer would be the entire body
 3 of, say, formation that includes, you know, sand,
 4 shales; and the water.
 5 Q Okay. So to summarize, if I understand your
 6 answer correctly, there are some wells that Murphy is
 7 currently operating below which there would be sands
 8 or an aquifer containing water?
 9 A To the best of my knowledge, yes, sir.
 10 Q And you also testified that that water is poor?
 11 A Typically, you know, when I first –
 12 MS. OSTBY: Yes or no.
 13 THE DEPONENT: Yes.
 14 BY MR. GALLIK:
 15 Q And why do you say that it's poor?
 16 A That's what I've always been told by the local
 17 people up there.
 18 Q So you've been told by local people that the
 19 water in this area has always been poor?
 20 A Yes.
 21 Q Okay. Has there ever been a time that you're
 22 aware of that the water has not been poor?
 23 A No.
 24 Q Okay. When you used the word "poor," does that
 25 mean the water is not potable?

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1 A No.
 2 Q What does it mean?
 3 A Hard minerals. Causes lots of problems with
 4 equipment in houses: Sinks, washing machines,
 5 dishwashers, or whatever equipment. It's highly
 6 mineralized. Sometimes contains high concentrations
 7 of chlorides as well as other irons and minerals.
 8 Usually has to be treated to be potable for drinking.
 9 Q So even though it's poor water, it's capable of
 10 being consumed by human beings?
 11 A Yes.
 12 Q Do you know from your experience, do landowners
 13 in the East Poplar Oil Field depend upon any of the
 14 freshwater in that area for drinking purposes?
 15 A To the best of my knowledge, they do, yes, sir.
 16 Q Okay. From your experience in the East Poplar
 17 Oil Field, does the tribe have any jurisdiction over
 18 your operations in that area?
 19 MS. OSTBY: Object to the extent it calls
 20 for a legal conclusion. Go ahead. You can answer.
 21 BY MR. GALLIK:
 22 Q I just asked whether you knew or not. Do you
 23 know?
 24 A I'm not aware that they do.
 25 Q Aside from the BLM and the board of oil and gas,

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1 are there any other regulatory agencies that you're
 2 aware of that have any jurisdiction in the East Poplar
 3 Oil Field?
 4 MS. OSTBY: Same objection. Go ahead.
 5 THE DEPONENT: BIA.
 6 BY MR. GALLIK:
 7 Q Bureau of Indian Affairs?
 8 A Yes.
 9 Q Are you aware of any rule or regulation of any
 10 jurisdiction in that area that allows an oil company
 11 to pollute groundwater?
 12 A I'm not aware of any, no.
 13 Q In terms of Murphy, how does Murphy educate its
 14 employees concerning proper adherence to rules and
 15 regulations of the various agencies that oversee oil
 16 and gas production in the East Poplar Oil Field?
 17 MS. OSTBY: This is a present-tense
 18 question, right?
 19 MR. GALLIK: Murphy. Right.
 20 MS. OSTBY: Right.
 21 THE DEPONENT: On-the-job experience as well
 22 as information that comes from the agencies. Notice
 23 to lessees; you know, directives or information that
 24 comes from ...
 25 ///

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1 BY MR. GALLIK:
 2 Q Okay. So that's the information that you would
 3 impart to the employees; is that correct?
 4 A We would try to impart to the employees, yes.
 5 Q Does Murphy, for example, have any sort of
 6 education program? Every six months, you meet?
 7 A No.
 8 Q Okay.
 9 A It's hard to teach somebody that's been there for
 10 30 years.
 11 Q In terms of compliance with the various
 12 regulations and rules that govern oil and gas
 13 operations in the East Poplar Oil Field, how does
 14 Murphy determine or confirm that its operations are
 15 currently in compliance with those regulations?
 16 A I'm not sure I understand the question now. Can
 17 you -
 18 Q Yeah. Murphy is operating up there right now; is
 19 that correct?
 20 A That's correct.
 21 Q How do you make sure that your operations are in
 22 compliance with the existing rules and regulations for
 23 oil and gas production?
 24 A That's a hard question to answer, but, I mean, on
 25 a daily basis, we're filing information with the -

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1 maybe not on a daily basis, but on a monthly basis we
 2 file information. We record and file information with
 3 the regulatory agencies, and they oversee our
 4 operations, and they typically will tell us when we're
 5 out of compliance, if we haven't spotted something
 6 ahead of time.
 7 Q Okay. As I understand it, you have some active,
 8 producing wells, correct?
 9 A That's correct.
 10 Q Okay. You have some that are, I'll use the word,
 11 temporarily abandoned? Is that fair, to use that
 12 word?
 13 A That's correct.
 14 Q And are there wells that are permanently
 15 abandoned?
 16 A Yes.
 17 Q Let's take, for example, the active well, the
 18 well that is producing as we speak. Okay. As I
 19 understood your testimony, on a monthly basis you
 20 would file reports, correct?
 21 A Correct.
 22 Q And those monthly reports, would that concern the
 23 existing well that's producing right now?
 24 A Yes.
 25 Q Okay. What would that monthly report tell me

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1 about that well?
 2 A Oil and gas production.
 3 Q Okay. Surface, or, I'm sorry, casing pressure
 4 tests?
 5 A No.
 6 Q How often does Murphy pressure-test the casing of
 7 producing wells?
 8 A There is no frequency that we test.
 9 Q So as I understand it, there is no policy from
 10 Murphy to test it, for example, on a monthly basis?
 11 A No.
 12 Q So aside from production information – and that
 13 basically would tell me how much oil was produced?
 14 A How much oil and water.
 15 Q How much gas?
 16 A We don't report gas.
 17 Q Okay. Aside from the amount of production, is
 18 there anything else that those monthly reports tell
 19 the reader?
 20 A Not to my knowledge, no.
 21 Q Okay. And those are filed with whom? Regulatory
 22 agencies?
 23 A Regulatory agencies. Some division of the BLM
 24 and some division of the state oil and gas board.
 25 Q So to your knowledge, then, there is no

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1 requirement by the EPA or a state agency with respect
 2 to periodic casing pressure testing?
 3 A No. Only on temporarily abandoned wells for the
 4 BLM.
 5 Q I was just about to go to those.
 6 A Let's take a quick break.
 7 Q Sure.
 8 (Recess taken from 10:36:51 to 10:44:27.)
 9 BY MR. GALLIK:
 10 Q Does Murphy have an environmental group or
 11 section on its payroll?
 12 A Yes.
 13 Q And how many employees are in that section of the
 14 company, if you know? Best estimate.
 15 A Four.
 16 Q And where are they located?
 17 A New Orleans.
 18 Q Do you know who the individuals are within that
 19 section?
 20 A Yes.
 21 Q And what are their names?
 22 A Chuck Bedell, Don Evans, Carol Schiavone, Debbie
 23 Benoit.
 24 Q And do you know what their relative duties and
 25 responsibilities are within that section?

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1 A Not specifically, no.
 2 Q How about in a general sense? Who is in charge
 3 of the environmental department?
 4 A Chuck Bedell.
 5 Q What generally, if you know, are his duties and
 6 responsibilities?
 7 A To monitor environmental regulations and keep us
 8 informed of changes in the environmental regulations.
 9 Q Okay. And is there a person within that section
 10 that's then responsible for seeing to it that that
 11 information is disseminated to employees of the
 12 company?
 13 A That, I'm not aware of.
 14 Q Okay. Do you know what an environmental audit
 15 is?
 16 A No – yes.
 17 Q What is an environmental audit?
 18 A It's a review by an environmental specialist of
 19 an operation, and usually some comments.
 20 Q Okay. Do you know, does Murphy perform
 21 environmental audits of any of its facilities?
 22 A Not specific audits, no.
 23 Q Okay. Not specific audits. Are there general
 24 audits?
 25 A Our guys are in the field every day, you know,

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1 looking at the operations, and, in essence, that's,
 2 you know, a daily audit. But there are no written
 3 audits by Chuck Bedell's group, no.
 4 Q So in terms of any environmental audits of the
 5 East Poplar Oil Field operation, you're not aware of
 6 any, I take it?
 7 A Not that we've done, no.
 8 Q By Murphy?
 9 A No.
 10 Q That's fair.
 11 In terms of the – we were talking before about
 12 records that are kept with respect to, kept or
 13 generated with respect to producing wells. Do you
 14 remember that discussion just a few minutes before the
 15 break?
 16 A Yes, yes.
 17 Q Another group of wells would be the temporarily
 18 abandoned wells?
 19 A Yes.
 20 Q And what is a temporarily abandoned well?
 21 A In general terms it's a well that you don't have
 22 immediate needs to put back on production, but you
 23 want to keep that asset as an asset for future
 24 utility.
 25 Q Okay. How does one temporarily abandon an oil

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1 well?

2 A I don't know that there's any specific methods,
3 but on some of the temporarily abandoned wells, we
4 have set cast-iron bridge plugs and leave -- pull all
5 of the tubing and the rods out of the well so it's
6 just the casing with fluid in the hole.

7 Q Okay. In terms of monitoring a temporarily
8 abandoned well, does Murphy have a policy about
9 inspection or monitoring of those wells?

10 A No.

11 Q In terms of reports or records that are generated
12 with respect to temporarily abandoned wells, are there
13 any such documents produced?

14 MS. OSTBY: You mean produced in this case
15 or produced in the ordinary course of business?

16 BY MR. GALLIK:

17 Q Ordinary course of business.

18 A Ordinary course of business, we produce a report
19 to the BLM that identifies all active, temporarily
20 abandoned, and shut-in wells.

21 Q Okay. And a temporarily abandoned well, there
22 would be a report given to the BLM, saying it's
23 temporarily abandoned?

24 A Yes.

25 Q And then are there any reports generated

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1 subsequent to that date prior to getting that well
2 going again?

3 A There would be no reports required, no.

4 Q Okay. So, in other words, you don't send someone
5 out every month to do a pressure test on the well?

6 A No.

7 Q What's a shut-in well?

8 A For a flowing well, it would just be one that you
9 closed the master valve on, or a wing valve, so that
10 it couldn't flow into the production system.

11 On a pumping well, it would be one that you
12 typically just shut the motor off and leave everything
13 in the well bore. It's just, in essence, shut in.

14 Q So is that one step above a temporarily abandoned
15 well, then?

16 A It could be defined that way, yes.

17 Q Okay. Does Murphy have a policy or procedure
18 with respect to periodic inspections of the shut-in
19 wells?

20 A No, other than we do routinely, you know, visit
21 the sites of temporarily abandoned and shut-in wells
22 just to inspect the surface.

23 Q Okay. And when you say you routinely do a site
24 inspection --

25 A (Nodded head affirmatively.)

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1 Q -- how often would that routine inspection take
2 place?

3 A I don't know what the frequency would be.

4 Q Okay. And when they go out and they take a look
5 at the site, as I understand your testimony, they do a
6 surface inspection; is that what you said?

7 A Just a visual surface inspection.

8 Q What are they looking for when they go out there?

9 A You're looking for leaking valves or --

10 Q That would be on a shut-in well?

11 A A shut-in or temporarily abandoned well.

12 Q Okay. Anything else you're looking for besides
13 leaking valves?

14 A Typically not, no.

15 Q And who would be the person that goes out there
16 and takes a look at the temporarily abandoned or
17 shut-in well?

18 A Typically the pumper that's assigned to that
19 area.

20 Q And what is a pumper?

21 A He's a daily operator for the field that takes,
22 gauges the production, monitors the equipment, does
23 routine maintenance on equipment.

24 Q Okay. And do you know who your pumper is in the
25 East Poplar Oil Field?

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1 MS. OSTBY: Today?

2 BY MR. GALLIK:

3 Q Yes.

4 A We have three pumpers that work in that field.

5 Q Okay. What are their names?

6 A Gary Grainger, Terry Ross, and Shane Come.

7 Q Are there any reports that are filed with
8 regulatory agencies concerning shut-in wells?

9 A Not to my knowledge, no.

10 Q Even at the time you shut it in, there are no
11 reports about it?

12 A No.

13 Q So from the BLM's perspective, as I understand
14 it, when you have a producing well, you'll have a
15 report on file saying that, "We're producing a certain
16 amount every month," correct?

17 A Yes.

18 Q How does the BLM know if it's temporarily shut in
19 or not temporarily abandoned?

20 A From the annual report that we send in.

21 Q Okay. So the annual report that's sent in every
22 year would contain what information?

23 A It's a plan of operations, kind of a review of
24 activities for the year, any proposed drilling plans
25 for the year. And then it has a list of all of the

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1 producing wells, shut-in wells, temporarily abandoned
2 wells, and how they're identified. And then it has
3 production reported for the year, both oil and water.
4 Q Okay. Is there a place on there for -- what I'm
5 talking about there, I'm talking about the annual
6 report. Is there a category on that report for
7 reporting any spills or leaks that were observed over
8 the past year on a particular well?
9 A No.
10 Q Okay. Does Murphy have a policy for the pumpers
11 in the field having, requiring them to report any
12 spills or leaks following an inspection?
13 A Yes.
14 Q Okay. And what is that policy? To report it?
15 A Yeah, to report it to their supervisor.
16 Q Okay. Is there a policy whether that's to be in
17 writing or orally?
18 A We do have an informal or formal reporting
19 policy, whatever you want to call it, but it's not a
20 policy according to the corporate policy. It's just
21 an operating procedure that we put it in writing from
22 the district to the New Orleans office that is
23 recorded in turn.
24 Q So it would be a piece of paper that's generated
25 that is then filed both in Poplar and in New Orleans?

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1 Am I correct in that?
2 A Yes, and that is the current policy.
3 Q How long has that policy been in effect, if you
4 know?
5 A I don't know.
6 Q As long as you've been there?
7 A No.
8 Q So sometime since you started in the mid '70s?
9 A Yes.
10 Q Do you know what the policy was prior to this new
11 policy?
12 A No.
13 Q I asked you earlier whether Murphy had ever
14 conducted an environmental audit of its operations in
15 the East Poplar Oil Field, and my recollection is that
16 you said no, correct?
17 A That's correct.
18 Q To your knowledge, has any other entity or agency
19 conducted an environmental audit of Murphy's
20 facilities in the East Poplar Oil Field?
21 A Yes.
22 Q And do you know the names of those groups or
23 group?
24 A I know the name of one group, yes.
25 Q Okay. And who is that?

1 A Union Pacific Resources.
2 Q Who is Union Pacific Resources?
3 A They're an oil and gas company, now a part of
4 AMARCO.
5 Q Do you know when that environmental audit was
6 accomplished?
7 A About 1997.
8 Q Do you know why Union Pacific Resources conducted
9 that audit?
10 A Yes.
11 Q Why is that?
12 A We were in the process of trying to sell property
13 to Union Pacific Resources.
14 Q So was this part of their due diligence, then,
15 prior to the purchase, if you know?
16 A Yes.
17 Q Did you have any role in the presentation of
18 information to Union Pacific with respect to that
19 audit that they performed?
20 A No.
21 Q Was there a contact person in Murphy that you're
22 aware of that worked with Union Pacific with respect
23 to that audit?
24 A Yes.
25 Q And who would that be?

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1 A Me.
2 Q But you didn't supply them with any information?
3 A No.
4 Q Okay.
5 A We supplied them with the ability to go do their
6 audit, you know, just -- all I did was coordinate the
7 visit.
8 Q Oh, okay. So they did a site visit?
9 A They did a site visit.
10 Q Did they ask for, to your knowledge, any records
11 or materials concerning the Murphy operations in the
12 East Poplar Oil Field?
13 A Not to my knowledge, no.
14 Q Do you know the length of time over which this
15 environmental audit took place?
16 A No.
17 Q Do you know whether a report was generated as a
18 result of that audit?
19 A I don't know for sure. I think there was a
20 report generated. Typically there is.
21 Q Have you seen environmental audits before?
22 A Yes.
23 Q What typically do they contain in terms of
24 information?
25 A Usually it's just a record of the site visit;

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1 any, I guess, concerns that that environmental firm
2 would have concerning the operation or the conduction
3 of -- you know, the conduct of the operation.
4 Q So has Murphy been involved in environmental
5 audits aside from the East Poplar Oil Field similar to
6 Union Pacific's where they're coming in and looking at
7 acquiring a piece of property from you?
8 A Acquiring property from us, yes.
9 Q Okay.
10 A Other companies have.
11 Q Okay. Did you tell me the name of the person
12 with Union Pacific who you were working with?
13 A I don't remember the name.
14 Q So in terms of what you did for Union Pacific,
15 you just said, "Here's our operations in the East
16 Poplar Oil Field. Go ahead and go take a look at it,"
17 essentially?
18 A Yes.
19 Q Did you accompany them out there in the field?
20 A No, I did not.
21 Q When was the last time you were in Poplar, by the
22 way?
23 A Last fall.
24 Q Okay. And what was the purpose of your trip last
25 fall?

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1 A Basically it was a field visit to visit with our
2 operations people, and generally we have some sort of
3 dinner with all of the employees. Just to visit and
4 look at the operations in the field.
5 Q So it was a trip for dinner and go out in the
6 field and take a look at the operations?
7 A Right.
8 Q And what was your purpose in looking at the
9 operations?
10 A Just to see how the operations looked. I mean,
11 you're looking for possible environmental issues that
12 we need to address or just, you know, physical
13 condition of the equipment. As operations manager,
14 just, you know, trying to make sure that things are
15 conducted according to Murphy's standards.
16 Q What were the results of your field visit last
17 fall in terms of physical condition of the equipment?
18 A Physical condition of the equipment is good.
19 Q How about in terms of the general operations of
20 the company?
21 A General operations are good.
22 Q Any problem at all identified from your site
23 visit in the fall of 2000?
24 A Not that I can remember, no.
25 Q Did you generate a report of that trip?

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1 A No.
2 Q Prior to the fall of 2000, when was the last time
3 that you were up in Poplar, Montana?
4 A I can't remember. I've averaged probably one
5 trip a year up there in the last four or five years.
6 Q Okay. And the purpose during the last four to
7 five years of that trip, would it be the same as your
8 trip last fall?
9 A It's basically the same, yes.
10 Q Prior to you going up there four to five years
11 ago for -- I know it wasn't the first time --
12 A No.
13 Q -- but the first time for this dinner and
14 inspection trip, was there another person with Murphy
15 that you're aware of that would go up there and do the
16 same annual trip?
17 A Not that I'm aware of, no.
18 Q Are you aware of why the decision was made by
19 Murphy to send someone up on an annual basis to
20 oversee or look over the operations?
21 A It's just routine. I mean, when I say, you know,
22 no one else had been up there, the managers generally
23 went up there on a routine basis, depending on how
24 long they had been in the office and how familiar they
25 were with the operations.

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1 Q Okay. Now would those managers be in New Orleans
2 or would they be in Poplar?
3 A In New Orleans.
4 Q Okay.
5 A There was one in New Orleans.
6 Q Okay. So prior to you going there, it would have
7 been (indicating quotes) managers?
8 A They would have been the previous manager, yes.
9 Q I guess maybe we had a miscommunication.
10 A I'm not --
11 Q I thought I asked that question. Prior to you
12 going up there, was there another corporate person who
13 would go up to the East Poplar Oil Field?
14 A It wouldn't have been corporate. It would have
15 been Expro, I guess would have been a corporate entity
16 of Murphy Oil Corporation, but Paul Ramsey would have
17 been the previous manager.
18 Q And is he still with the company?
19 A No.
20 Q Do you know where he is now?
21 A I think he's still in Mandeville, Louisiana.
22 Q Returning to the Union Pacific Resources
23 environmental audit, do you know what the results of
24 that audit were?
25 A In general terms, they did not find any major

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1 environmental problems that would prevent them from
2 purchasing the field.
3 Q Did they purchase the field?
4 A They made an offer that was accepted, and we have
5 a purchase and sale agreement with them that has not
6 been executed at this point. The purchase and sale
7 agreement has been executed, but the deal was not
8 closed.
9 Q Why not, if you know?
10 A I don't know for sure why.
11 Q Is it because of this litigation or EPA, do you
12 know?
13 A That's what UPRC claimed.
14 Q So is that deal now dead?
15 A No.
16 Q What is it contingent on, if you know?
17 A The outcome of the lawsuit, or two lawsuits.
18 Q And those would be the one we're here talking
19 about today?
20 A No. The breach of contract suit.
21 Q Oh, I see. So you're involved in litigation with
22 Union Pacific Resources on that very issue?
23 A Yes.
24 Q Okay. That's one lawsuit. Is there another
25 lawsuit?

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1 A (Indicating.)
2 Q This one here?
3 A No, there was one -
4 Q Between the two of them?
5 A Two suits between the two of us; one suing us,
6 one suing them.
7 Q I see. So you're suing each other?
8 A Yes.
9 Q Do you know where that case is filed? Is that in
10 Louisiana or some other state?
11 A One is in Louisiana, and one is in Montana.
12 Q Oh, okay.
13 Now as I recall your testimony in general about
14 the results of the audit, there were no major
15 environmental problems that would prevent them from
16 purchasing the field; is that a fair summary of what
17 you said?
18 A Yes.
19 Q Okay. Did they identify any environmental
20 problems with the field that you're aware of?
21 A Yes.
22 Q What did they identify?
23 A The USGS studies have been a potential problem
24 for groundwater.
25 Q So in terms of your testimony that they

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1 identified no major environmental problems that would
2 prevent them from purchasing the field, is that what
3 Union Pacific told you or -
4 A Yes.
5 MS. OSTBY: Wait. Let him finish.
6 BY MR. GALLIK:
7 Q Is that their comment to you?
8 A That was their comment when they signed the
9 purchase and sale agreement.
10 Q Okay.
11 A They did their audit prior to signing the
12 purchase and sale agreement.
13 Q Okay. I'm a little bit confused here about the
14 timing. They signed a purchase and sale agreement,
15 and was the audit before or after that?
16 A It was before.
17 Q Okay. And when did they, if you know, first have
18 access to the USGS study regarding potential
19 groundwater contamination?
20 MS. OSTBY: If you know. That calls for
21 speculation. How would he know if people had access?
22 BY MR. GALLIK:
23 Q If you know.
24 A I don't know what their earliest -
25 MS. OSTBY: People had access to it when it

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1 was filed.
2 MR. GALLIK: I understand.
3 BY MR. GALLIK:
4 Q If you know.
5 A I know they looked at it when they visited the
6 data room their first visit.
7 Q Okay. All right. Now so they visited the data
8 room. What's the data room?
9 A It's just the files for them to come in and
10 review, I mean, in any acquisition.
11 Q So in addition to a site visit, they also looked
12 at well files?
13 A They had the opportunity to look at well files.
14 Q To your knowledge, did they take that opportunity
15 to look at them?
16 A They did.
17 Q Okay.
18 A They were in the building, anyway.
19 Q Union Pacific was in the same building as the oil
20 field?
21 A That's correct.
22 Q In terms of other documents in the data room, is
23 this literally a room that has data concerning the -
24 A It would be a room containing well files.
25 Q Okay. That's it?

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1 A Yes.
 2 Q Okay. And that room would contain well files for
 3 Murphy's operations in the East Poplar Oil Field?
 4 A Yes.
 5 Q Were there any bees flying around in there?
 6 A No, not in this one.
 7 Q Okay.
 8 MS. OSTBY: Wasps.
 9 MR. WEBSTER: Whatever they were.
 10 BY MR. GALLIK:
 11 Q Was it air-conditioned?
 12 A Yes, it was.
 13 Q I'm just a little bit confused about the timing
 14 on this. The buy/sell agreement was purchased –
 15 MS. OSTBY: Purchased?
 16 BY MR. GALLIK:
 17 Q I mean executed.
 18 A Yes.
 19 Q Was there a contingency in there that they would
 20 do their environmental audit before closing, or had
 21 they already done their environmental audit when they
 22 signed it?
 23 A They had done a visit. I don't know whether they
 24 had actually done their full audit, you know, prior to
 25 the purchase and sale agreement.

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1 Q To your knowledge, if you know, was the buy/sell
 2 agreement contingent on any events listed in that
 3 agreement?
 4 MS. OSTBY: I object to the extent it calls
 5 for a legal conclusion.
 6 THE DEPONENT: No. I don't know.
 7 BY MR. GALLIK:
 8 Q So it wasn't contingent upon them accepting or
 9 reviewing the records, for example?
 10 MS. OSTBY: Same objection. Asked and
 11 answered.
 12 THE DEPONENT: I don't know.
 13 BY MR. GALLIK:
 14 Q Okay. The reason I'm a little bit confused, when
 15 I asked you, as I understand your testimony, there
 16 were no major environmental problems that would have
 17 prevented them from purchasing the field. I asked
 18 whether there were any environmental problems
 19 identified by them –
 20 A (Nodded head affirmatively.)
 21 Q – and I thought I heard you say the USGS study
 22 was a potential problem. Was I correct in that
 23 understanding?
 24 A Yes.
 25 Q Okay. What I'm trying to understand is did they

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1 review that as part of their environmental audit, if
 2 you know?
 3 A I don't know that.
 4 Q Okay. Do you know whether they reviewed it
 5 before or after they signed the purchase – buy/sell
 6 agreement?
 7 A I don't know.
 8 Q Okay. So in any event, they didn't close on the
 9 purchase, correct?
 10 A They did not.
 11 Q Did they tell you why?
 12 A They told us it was because of the Youpee
 13 lawsuit.
 14 Q Were they aware at that time of any action, if
 15 you know, by the EPA?
 16 A I don't –
 17 MS. OSTBY: Objection. Calls for
 18 speculation.
 19 THE DEPONENT: I don't know.
 20 BY MR. GALLIK:
 21 Q Did they identify to you, as a problem with the
 22 purchase, the EPA action?
 23 A I don't remember that they did.
 24 Q Have you given a deposition in that particular
 25 case?

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1 A In which case?
 2 Q The – I guess that's a good question. You have
 3 two cases between the two companies, I take it,
 4 involving the purchase – buy/sell agreement; is that
 5 correct? You have two cases going?
 6 A There's only one active. There's two cases. I
 7 don't – I can't remember giving a deposition in that
 8 case.
 9 Q Okay.
 10 A We've had several meetings, but I don't remember
 11 that I've given a deposition there.
 12 Q Okay. You said that one is active and, I take
 13 it, the other is not. Do you know which one is
 14 active?
 15 A Louisiana.
 16 Q Okay. So as I understand it, then, just to
 17 summarize, to your knowledge, the environmental audit
 18 that was conducted consisted of a site visit and
 19 opportunity to inspect documents in the data room?
 20 A Yes.
 21 Q Okay. Anything else that you're aware of?
 22 A No.
 23 Q Okay. And the statement there were no major
 24 environmental problems that would prevent them from
 25 purchasing the field, was that in the form of any sort

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1 of document that you've ever seen as --
 2 A No.
 3 Q Was that an oral statement to you?
 4 A That was my understanding, you know, from talking
 5 to the UPRC personnel just in the normal course of
 6 business in trying to get the purchase and sale
 7 agreement executed.
 8 Q So, in other words, they said, "We've done our
 9 audit, and there's nothing wrong with it"?
 10 A That's, in essence, yes, they were ready to
 11 proceed with it, the purchase and sale agreement.
 12 (Exhibit 62 was marked for identification.)
 13 BY MR. GALLIK:
 14 Q Okay. I'm handing you what's been marked as
 15 Exhibit 62, which is titled An Operational and
 16 Environmental Assessment, East Poplar Unit Oil Field,
 17 Northeast Montana. Have you seen that document
 18 before?
 19 A Yes.
 20 Q Okay. It's titled Environmental Assessment. Is
 21 there a difference between an environmental audit and
 22 an environmental assessment?
 23 A I don't know.
 24 Q Okay. Just so we tie up the loose end here,
 25 aside from the Union Pacific audit and this particular

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1 assessment that we have here, are you aware of any
 2 other audits or assessments with respect to Murphy's
 3 operations in the East Poplar Oil Field?
 4 A I'm not aware of any, no.
 5 Q In terms of the environmental assessment -- and
 6 when I say "environmental assessment" from here on
 7 out, I'm talking about Exhibit 62.
 8 A Yes, sir.
 9 Q When did you first become aware that this
 10 assessment was going to take place?
 11 A I don't remember.
 12 Q Did you have any role on behalf of Murphy in
 13 providing information to the investigators for this
 14 environmental assessment?
 15 A I did not, no.
 16 Q Do you know whether anyone in Murphy had any
 17 interaction with the investigators with respect to
 18 this assessment?
 19 A Our field personnel were there at the time of the
 20 inspection --
 21 Q Okay.
 22 A -- and engaged -- I forget. Mr. Holm, I believe.
 23 Q Just so I'm clear, they were there on site, but
 24 you're not aware of any documents being requested and
 25 provided?

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1 A No. There were no documents requested from me.
 2 Q Or, to your knowledge, Murphy?
 3 A Or, to my knowledge, from Murphy.
 4 Q Okay. When, if you know, did you receive a copy
 5 of this report which is dated May 1999?
 6 A I don't have a document that shows when we
 7 received it, but it was sometime about the same time
 8 as the time period of this report, May of '99.
 9 Q Okay.
 10 A It may have been previous to the report. We got
 11 a letter.
 12 Q From the --
 13 A We got a letter, you know, just a cover letter
 14 for this report.
 15 Q And the cover letter would have been authored by
 16 whom, if you recall?
 17 A I don't recall. It wasn't Mr. Holm. It was
 18 someone with the Sonosky Law Firm.
 19 Q In Washington, D.C.?
 20 A Yes.
 21 MR. GALLIK: Okay. Maybe we can take a
 22 little break here.
 23 (Recess taken from 11:17:49 to 11:24:39.)
 24 BY MR. GALLIK:
 25 Q Before we talk about Exhibit 62, does Murphy have

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1 any policies or procedures with respect to reporting
 2 leaks or spills of saltwater at its facilities out in
 3 the field?
 4 MS. OSTBY: Hasn't that been asked and
 5 answered?
 6 BY MR. GALLIK:
 7 Q I don't recall the answer.
 8 A There's no policy, but it's a normal operating
 9 practice, when we report a spill, we report oil volume
 10 and saltwater volume.
 11 Q Are there regulations that require, for example,
 12 if a certain amount hits the ground, that you're to do
 13 a cleanup plan or --
 14 A I don't know. Not that I'm aware of.
 15 Q Okay. Is there any cleanup plan that Murphy has
 16 generated with respect to East Poplar Oil Field with
 17 respect to its operations in the event of any spills
 18 or leaks of saltwater during the course of production?
 19 A I didn't follow the question.
 20 Q Is there a cleanup plan that you provided to any
 21 employees out working in the field in the event
 22 saltwater hits the ground, or oil, as a result of
 23 production?
 24 A No.
 25 Q There would be no document that, "This is what

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1 you do?"
 2 A No.
 3 Q Okay.
 4 (Exhibit 63 was marked for identification.)
 5 BY MR. GALLIK:
 6 Q I'm handing you what I've marked as Murphy's
 7 responses to plaintiffs' first discovery requests, and
 8 that's been marked as Exhibit 63.
 9 A Yes, sir.
 10 Q I believe, if you turn to the last page, that
 11 contains your signature.
 12 A Yes, sir, it does.
 13 Q You helped in preparing the answers to these
 14 questions?
 15 A I helped and reviewed the answers to these
 16 questions.
 17 Q If you look at page 3, the answer to
 18 Interrogatory No. 2 in general talks about water
 19 produced in association with the production of oil.
 20 Do you see that?
 21 A Interrogatory No. 2?
 22 Q The answer down there, subsection (a), very
 23 bottom.
 24 A Yes, yes.
 25 Q Okay. When you use the word "produced" water,

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1 and that shows up in a number of your answers later
 2 on, is produced water the same as a water containing a
 3 high amount of sodium chloride?
 4 A It can be, yes.
 5 Q And in terms of your answer to this particular
 6 question where you later on provide an estimate of the
 7 amount of produced water that was disposed of in pits
 8 and saltwater disposal wells, is that produced water
 9 or is it just saltwater that your answer refers to?
 10 MS. OSTBY: I object. I don't know what
 11 you're asking.
 12 THE DEPONENT: I don't know.
 13 BY MR. GALLIK:
 14 Q You use the term "produced water" disposed of in
 15 earthen pits or saltwater injection wells, if you want
 16 to look at your specific answer to page 8,
 17 subparagraph (d).
 18 A (d)?
 19 Q Subparagraph (d) at the top.
 20 A Yes.
 21 Q You talk about the amount of barrels of produced
 22 water disposed of into earthen pits. Do you see that?
 23 A Yes.
 24 Q Would the produced water that you're referring to
 25 there also include water containing sodium chloride?

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1 A Yes.
 2 Q Okay. And the water that's also disposed of in
 3 saltwater disposal wells, that's also water containing
 4 sodium chloride?
 5 A Most of it would be, yes.
 6 Q Most of the water --
 7 A Yeah.
 8 Q -- that you're referring to as produced water
 9 would be water containing sodium chloride?
 10 A That's correct.
 11 Q Okay. And so the answers that are provided in
 12 there in terms of the amount of produced or saltwater
 13 that was disposed of in saltwater disposal wells, your
 14 answer today would be the same as what's provided in
 15 this interrogatory, correct?
 16 A Yes.
 17 MS. OSTBY: Which interrogatory are you
 18 talking about? That number on page 8?
 19 MR. GALLIK: It's the same one,
 20 Interrogatory No. 2. The answer goes on for a number
 21 of pages.
 22 MS. OSTBY: And you're asking if his answer
 23 to Interrogatory 2 would be the same today as it was
 24 then?
 25 MR. GALLIK: Yes.

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1 MS. OSTBY: Do you want to take an
 2 opportunity to look at it, then? That's a long
 3 answer.
 4 MR. GALLIK: I'm talking about the amount of
 5 water disposed of.
 6 MS. OSTBY: Has he learned anything between
 7 the time he signed this that would cause him to change
 8 the answer --
 9 MR. GALLIK: Yes.
 10 MS. OSTBY: -- in terms of the answer in
 11 terms of numbers of barrels of produced water? Is
 12 that the question?
 13 MR. GALLIK: Yes.
 14 THE DEPONENT: As far as I know, the volumes
 15 of water that we furnished were correct to the best of
 16 our knowledge.
 17 BY MR. GALLIK:
 18 Q Now on page 8, subparagraph (d) --
 19 A Okay.
 20 Q -- it seems to me we're talking about three
 21 methods of disposing of water, correct?
 22 A Yes.
 23 Q Okay. With the reinjection of produced water
 24 into pressure maintenance wells, is the purpose of
 25 that to try and help get more oil out of the area that

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1 you're pumping oil from?
 2 A Yes.
 3 Q Okay. And then that produced water would stay in
 4 that same geologic zone where the oil is being
 5 produced from?
 6 A Yes.
 7 Q Okay. And the purpose of injecting the produced
 8 water into that zone is to increase the pressure in
 9 that zone and cause the oil that you're pumping to
 10 come up to the surface easier?
 11 A Yes, that's part of it.
 12 Q Okay. What's the other part of it? To dispose
 13 of water, too?
 14 A No. At that time it may have been -- I don't
 15 know whether it was disposal of water, but I was
 16 relating to your definition of why the water was put
 17 into the ground.
 18 Q It's to help get more oil up, right?
 19 A Right. That's correct.
 20 Q Okay. Now did Murphy, to your knowledge, inject
 21 or dispose of saltwater from any source other than its
 22 own wells in the East Poplar Oil Field?
 23 A To my knowledge, no.
 24 Q Okay. So you didn't, for example, take any water
 25 from Pioneer and dispose of it for them?

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1 A Not to my knowledge, no.
 2 Q Aside from helping recover additional oil from
 3 producing zones, how else was the produced water or
 4 saltwater used in Murphy's operations?
 5 MS. OSTBY: Do you mean was it used in any
 6 way other than being disposed?
 7 BY MR. GALLIK:
 8 Q How else? Was there any other way that it was
 9 used besides secondary recovery or increased pressure
 10 in the producing zone?
 11 A No. That's the primary purpose. We used it for
 12 a heat source for our heater treaters because we don't
 13 burn gas in our heater treaters. It helps with the
 14 separation of the oil.
 15 Q To your knowledge, has Murphy ever injected or
 16 disposed of freshwater into the subsurface below its
 17 properties in the East Poplar Oil Field?
 18 A Not to my knowledge.
 19 Q Did Murphy ever utilize water for any purpose
 20 from freshwater wells below your properties in the
 21 East Poplar Oil Field?
 22 A I don't know.
 23 Q Okay. I ask this question generally about the
 24 existence of water in the East Poplar Oil Field. Do
 25 you know whether any freshwater wells exist or have

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1 ever existed on the properties that Murphy leases or
 2 operates in the East Poplar Oil Field?
 3 A You're going to have to rephrase that question or
 4 give me --
 5 Q Okay. Do you know whether any freshwater wells
 6 exist or have ever existed on the properties that
 7 Murphy owns or leases in the East Poplar Oil Field?
 8 MS. OSTBY: I'm going to object. Could you
 9 define what you mean by "freshwater," please?
 10 THE DEPONENT: And "property."
 11 BY MR. GALLIK:
 12 Q And "property"?
 13 A Yes.
 14 Q Okay. How about water that's capable of -- let's
 15 define "freshwater" as being capable of being consumed
 16 by human beings.
 17 A Potable?
 18 Q Potable water. Is that a fair definition?
 19 A Fair definition.
 20 Q And "property," does Murphy have any oil and gas
 21 leases in the East Poplar Oil Field?
 22 A Yes.
 23 Q And would that be a property interest, in your
 24 mind?
 25 A It can be defined as a property interest, yes.

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1 Q Okay. And do you own any property in the East
 2 Poplar Oil Field aside from leasing it?
 3 A I think --
 4 MS. OSTBY: You mean like a fee interest in
 5 land?
 6 THE DEPONENT: I think there are a couple of
 7 fee tracts in the unit.
 8 BY MR. GALLIK: --
 9 Q Okay.
 10 A -- in the unit area.
 11 Q So you have both fee and leased properties in the
 12 unit?
 13 A That's correct.
 14 Q Okay. Any other types of property interests you
 15 have in the East Poplar Oil Field today?
 16 A I'm not sure I understand the question. We have
 17 leases --
 18 Q Okay.
 19 A -- that are both fee, tribal, and tribal allotted
 20 lands.
 21 Q Um-hmm.
 22 A There are some -- and those are minerals that we
 23 have leases on. There are some fee tracts, I think,
 24 that Exxon or someone owned that was in the unit. I
 25 don't know whether Murphy owns any fee tracts or not.

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1 Q Okay.

2 A And that fee being they own the surface --

3 Q Um-hmm.

4 A -- as well as the minerals.

5 Q Okay. Let me see if we can agree on this.

6 When you go out and put a well on somebody's

7 property --

8 A Um-hmm.

9 Q -- you have a right, from Murphy's standpoint, to

10 go and put that well on somebody's property, right?

11 A That's correct.

12 Q Would that be considered a property interest?

13 MS. OSTBY: The right to go out --

14 BY MR. GALLIK:

15 Q The ability to go out there and put a well out

16 there.

17 A Well, property, to me is something that you own.

18 Q Right.

19 A Okay. The lease is something that you have a

20 right to use.

21 Q Sure.

22 A So that's where I'm getting confused, I guess, in

23 your questions about property.

24 Q Okay. Well, let's use the definition that you

25 understand, which is, let's say, you have a right to

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1 go and use with a lease, okay?

2 A Okay.

3 Q Taking into account your right to use property,

4 and the freshwater being water that's potable, capable

5 of being consumed --

6 A Okay.

7 Q -- do you know whether any freshwater wells or

8 potable water wells exist or have ever existed on

9 properties, using our definition, owned or controlled

10 by Murphy in the East Poplar Oil Field?

11 A I don't know of any that we own or control today.

12 I don't know whether there were any in the past or

13 not.

14 Q Okay. So you don't know?

15 A I don't know.

16 Q Okay. I see that in addition to reinjection of

17 water into producing zones and disposal of produced

18 water through saltwater injection wells, that there

19 was also a period of time where Murphy disposed of

20 water in pits?

21 A That's what's been recorded, yes.

22 Q And the records that -- and these are your

23 answers. This would have been approximately 1952 to

24 1957, is that correct --

25 A That's my understanding, yes.

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1 Q -- looking at page 6 of your answers?

2 A Yes.

3 Q Now in order to provide those answers on page 6

4 of that deposition exhibit, what records did you look

5 at to come up with the location and dates of the

6 storage pits that were identified there?

7 A The tank batteries were identified on old maps as

8 to where the tank batteries were.

9 Q Okay.

10 A And the pits were a pit at each tank battery as

11 an emergency pit.

12 Q Okay.

13 A And we looked at the records that Murphy had in

14 the Poplar office --

15 Q Um-hmm.

16 A -- and that was proposed in the Poplar office as

17 to where these pits were located.

18 Q From your experience in the oil industry, and I

19 think we talked about this early on in the deposition,

20 you talked about change in the '50s with respect to

21 certain oil practices. Would one of those changes be

22 movement away from earthen pits to dispose of produced

23 water?

24 A Yes.

25 Q And do you know why that movement away from

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1 earthen pits was implemented?

2 A No.

3 Q Okay. Do you know, from your review of the

4 records that are at Murphy, whether the disposal pits

5 that you've identified were lined or unlined?

6 A I don't know.

7 Q Okay. Do you know, when a pit is lined, what

8 type of material it can be lined with?

9 A Yes.

10 MS. OSTBY: Today?

11 BY MR. GALLIK:

12 Q Yes.

13 A Yes.

14 Q What types of material?

15 A Today?

16 Q Yes.

17 A It can be earthen clay materials --

18 Q Okay.

19 A -- or it can be synthetic materials --

20 Q Okay.

21 A -- much like a PVC or some type of polyvinyl, or

22 impermeable, basically impermeable, synthetic barrier.

23 Q Okay. Now the disposal pits identified in your

24 answer on page 6 and over on into page 7 all seem to

25 have been in operation through September of 1957. Do

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1 you see that? You can look at the answer.
 2 A Yes, yes.
 3 Q September of 1957 seems to have been a pretty
 4 clear demarcation of disposal techniques, at least
 5 with respect to Murphy?
 6 A Yes.
 7 Q And do you know, from your review of the records,
 8 what happened in September of 1957 to cause all of
 9 these pits to no longer be used?
 10 A No.
 11 Q Okay. Do you know, from your work with Murphy or
 12 any investigation, whether any of these pits still
 13 exist?
 14 A Saltwater disposal pits exist at some of the
 15 wells, some of the disposal wells.
 16 Q No, I understand that. Maybe we're talking about
 17 different things, or I don't understand your answer.
 18 A Okay.
 19 Q The pits that are listed here that were used
 20 through September 1957 –
 21 A The tank battery pits?
 22 Q That's correct – do you know whether any of
 23 those are still in existence today?
 24 A To the best of my knowledge, those pits don't
 25 exist today.

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1 Q And to follow up on your answer, as I understand
 2 it, on some wells there would be currently a disposal
 3 pit, correct, today?
 4 A It's an emergency pit, yes.
 5 Q And in the event other procedures aren't working
 6 with respect to disposal of produced water, that pit
 7 is there for use, correct?
 8 A That's correct.
 9 Q I assume that those pits are lined?
 10 A Those pits are all lined.
 11 Q What are they lined with, if you know?
 12 A It's a synthetic, impermeable material.
 13 Q Okay. Now in terms of – if you look at page 8
 14 of your answers, it talks about the number of barrels
 15 of produced water disposed of into earthen pits. Do
 16 you see that?
 17 A Yes.
 18 Q 10,686,000?
 19 A Yes.
 20 Q Okay. Do you know – I'm just trying to
 21 understand what you mean by "disposed of." I assume
 22 that that amount of produced water was disposed of in
 23 the pits that you've listed in pages 6 and 7 of the
 24 answers to interrogatories?
 25 A That's my understanding, yes, of where it was

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1 disposed of.
 2 Q Okay. In terms of disposing of produced water in
 3 disposal pits as opposed to reinjecting it, for
 4 example, into the below ground?
 5 A (Nodded head affirmatively.)
 6 Q Okay. Explain to me what happens when you
 7 dispose of water in an earthen pit.
 8 MS. OSTBY: If you know.
 9 THE DEPONENT: I don't know.
 10 BY MR. GALLIK:
 11 Q Okay.
 12 A I mean, I would be speculating as to what
 13 happened on each individual pit, and I just don't
 14 know.
 15 Q Okay. What's the purpose of the earthen disposal
 16 pit, if you know?
 17 A The common term was evaporation pits.
 18 Q Okay.
 19 A And there is a rate of evaporation at which you
 20 can dispose of that.
 21 Q So when a well is in production, a certain amount
 22 of water is produced, correct?
 23 A Not necessarily, no.
 24 Q In the East Poplar Oil Field, it's not uncommon
 25 to have water produced, is it?

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1 A Today, that's correct.
 2 Q Okay. And at least 10 million barrels of
 3 produced water was disposed of into earthen pits,
 4 according to your records, correct?
 5 A That's correct.
 6 Q So there was at least some water produced in the
 7 '50s that was disposed of in these pits?
 8 A That's correct.
 9 Q Okay. So your understanding, then, would be that
 10 that water is disposed of through evaporation?
 11 A That was the general understanding at the time,
 12 yes.
 13 Q Okay. And you don't know whether the pits were
 14 lined or not?
 15 A I do not.
 16 Q Was there ever, to your knowledge, a time in the
 17 industry where the water was just simply dumped on the
 18 ground?
 19 MS. OSTBY: Anywhere?
 20 BY MR. GALLIK:
 21 Q In the East Poplar Oil Field.
 22 A In the East Poplar Oil Field, I'm not aware of
 23 any, no.
 24 Q Okay. Do you know whether – strike that.
 25 You don't know whether any of these pits were

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1 lined or unlined, do you?
 2 A I do not know.
 3 Q Looking at Exhibit 62 --
 4 A Okay.
 5 Q -- if you turn to page 4 --
 6 A Okay.
 7 Q -- second paragraph, if you could just read that
 8 to yourself? It starts out, "The mud."
 9 A "The mud returns."
 10 (Pause.)
 11 THE DEPONENT: Okay.
 12 BY MR. GALLIK:
 13 Q From your experience in the industry, is that a
 14 fair statement of the use of pits in the oil industry
 15 in terms of disposal of produced water?
 16 MS. OSTBY: I object. That's ambiguous and
 17 unintelligible. "Fair" is a subjective term. You
 18 keep using it. I haven't objected yet, but I don't
 19 know if you mean is that accurate, inaccurate, and I
 20 don't know what you're referring to. There's a lot in
 21 here with respect to pits, so it's overly broad.
 22 THE DEPONENT: I can't answer that.
 23 BY MR. GALLIK:
 24 Q You can't answer that?
 25 A I don't understand the question.

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1 Q Okay. The question talks about -- or, I'm sorry,
 2 the paragraph talks about mud returns, correct? It
 3 starts out with that?
 4 A Yes.
 5 Q And how they go through a shale shaker?
 6 A Yes.
 7 Q Okay. And in terms of the drilling process, is
 8 that accurate, that the mud returns are often run
 9 through a shale shaker?
 10 A Yes.
 11 Q Okay. The next sentence then talks about the
 12 EPU, which I assume is the East Poplar Unit?
 13 A That's what I assume.
 14 Q Okay. It says that mud returns from the shaker
 15 were emptied into the reserve pit where the mud was
 16 stored until recycled back into the bore hole. Was
 17 that a common practice, to your knowledge, with
 18 respect to the use of mud in the oil field operation?
 19 A At that point in time, it would have been a
 20 common practice for mud, yes.
 21 Q Okay.
 22 A For the drilling mud.
 23 Q Okay. At that time. Now what's -- I take it
 24 today that would not be a common practice?
 25 A It's common practice in some areas --

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1 Q Okay.
 2 A -- still today.
 3 Q Do you know whether that's the practice of Murphy
 4 in the East Poplar Oil Field?
 5 A No.
 6 Q Okay.
 7 A We use lined reserve pits.
 8 Q Okay. For the mud returns?
 9 A For the drilling, tanks, and then reserve pits
 10 much like he describes in the paragraph.
 11 Q Okay. So the pit serves a couple of different
 12 purposes today aside from just general emergency? It
 13 also serves as a place to store --
 14 A And I think -- let me just make a point of
 15 clarification. I think you're confusing pits in
 16 general.
 17 Q Um-hmm.
 18 A This is a drilling reserve pit.
 19 Q Drilling reserve pit?
 20 A Only.
 21 Q So this would not be a saltwater disposal pit
 22 we're talking about?
 23 A No, it would not.
 24 Q Okay. The drilling pits that we're talking about
 25 today are also lined, I take it, with synthetic

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1 material?
 2 A Yes.
 3 Q That, you've talked about earlier?
 4 A In Poplar, they would be lined.
 5 Q So now we're talking about drilling reserve pits.
 6 Now do you know whether -- he says in here, "Formerly,
 7 pits were unlined, and they contained salt-based
 8 muds." Do you know from your experience whether
 9 Murphy's drilling reserve pits were unlined?
 10 A I don't know back then.
 11 Q Do you know what the practice would have been
 12 back then?
 13 A The practice would have been for pits not to be
 14 lined with the synthetic material, but the drilling
 15 mud does line the pit and typically makes it
 16 impermeable or you wouldn't be able to contain fluid
 17 in the pit for your drilling operations.
 18 Q Okay. So the practice back then with drilling
 19 mud pits -- well, strike that.
 20 When we go out to a tank battery, we would have a
 21 saltwater disposal pit?
 22 A At a typical battery today, no.
 23 Q I'm sorry; back in the '50s. Let's go back to
 24 the '50s.
 25 A Okay.

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1 Q Would you have two pits away at a well?
 2 MS. OSTBY: You switched away from drilling?
 3 THE DEPONENT: Yes. You're talking about
 4 tank battery pits as identified in this document?
 5 BY MR. GALLIK:
 6 Q Correct.
 7 A I can't tell you how they were set up other than
 8 my understanding was there was one pit, and it was not
 9 designed as a disposal pit. It was designed as an
 10 emergency pit for operations, for continued
 11 operations.
 12 Q Of the drilling mud?
 13 A No, no, no, no.
 14 Q Okay.
 15 A Produced, produced water --
 16 Q Okay.
 17 A -- or produced oil, whichever you needed to
 18 temporarily store.
 19 Q I see. And that would be -- the question I have
 20 is simply this. Back in the '50s when you've got
 21 these pits, to your knowledge, was there just simply
 22 one pit for reserve drilling mud and saltwater
 23 disposal?
 24 MS. OSTBY: Can we go off the record for a
 25 minute?

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1 THE DEPONENT: Let's go off the record.
 2 (Discussion off the record.)
 3 BY MR. GALLIK:
 4 Q Back on the record.
 5 A Okay.
 6 Q In terms of the pits, and you helped me off the
 7 record here understand the two different types of pits
 8 that we've been talking about, when a person has a
 9 tank battery -- is that a proper use of the term?
 10 Tank battery?
 11 A Yes, sir.
 12 Q At that tank battery, what would be located at
 13 the tank battery?
 14 A It would be a separator, if it's required; a
 15 heater treater, if it's required; and storage tanks
 16 for oil and/or saltwater --
 17 Q Okay.
 18 A -- so that you can store the oil before you ship
 19 it out. You can measure it and ship it.
 20 Q Okay. And that's separate and apart from the
 21 reserve pit that we've been talking about with respect
 22 to drilling mud?
 23 A That's correct.
 24 Q Okay. That would be located at another location?
 25 A Yes, sir.

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1 Q Next to the well that was being drilled, for
 2 example?
 3 A Typically it would be real close to the well.
 4 Q Okay. Now with respect to the tank battery,
 5 let's move back in time. Your answer was that now,
 6 correct me if I'm wrong, but there would be a tank
 7 there now for storage of water or oil, correct?
 8 A Yes.
 9 Q Okay. Back in the '50s, would the saltwater
 10 disposal pit be located at the tank battery?
 11 A Typically --
 12 MS. OSTBY: I'm going to object that it
 13 calls for speculation. He wasn't there.
 14 MR. GALLIK: I understand that, but in
 15 general operations --
 16 MS. OSTBY: To the extent you have
 17 knowledge, tell him, but don't speculate.
 18 THE DEPONENT: Okay.
 19 BY MR. GALLIK:
 20 Q Would it be common practice, to your knowledge,
 21 if you know, in the 1950s for the saltwater disposal
 22 pit to be located with the tank battery?
 23 A I don't know that I can really answer that
 24 question.
 25 Q Okay.

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1 A In this particular instance, they were located,
 2 to the best of my knowledge, near the tank battery as
 3 described in this response.
 4 Q Okay. And these tank batteries, do they serve
 5 more than one producing well?
 6 A Yes.
 7 Q Okay. So with respect to your answer to the
 8 interrogatories early on, in the first set of
 9 discovery requests it talks about the amount of
 10 produced water that was disposed of in earthen pits.
 11 Do you remember that?
 12 A Yes.
 13 Q Some 10 million barrels of water. Would one
 14 reserve pit possibly have been the recipient of
 15 disposed water from several wells?
 16 A I'm not sure I understand the question there.
 17 Q Okay. I'm just trying to tie together now the
 18 reserve -- or the saltwater disposal pits with the
 19 operating wells in the East Poplar Oil Field.
 20 A Okay.
 21 Q To your knowledge, would a reserve pit possibly
 22 have been the source of disposal of produced water for
 23 more than one well?
 24 A It was possible, yes.
 25 Q Okay. From your own experience up in the Poplar

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1 region; do you know whether the surface or the ground
2 that we are dealing with up there is of a clay-type
3 material that you talked about earlier, or is it of
4 more porosity, more porous?
5 A It's mixed. I don't know. You'd have to look at
6 a map to define the soil up there. It's basically
7 defined as a glacial till.
8 Q And do you know whether glacial tills are
9 characterized or often characterized with clay or
10 other porous material, if you know?
11 A They typically have quite a bit of clay.
12 Q Okay.
13 A Generally 5 particles.
14 Q And is clay, from your experience, a substance
15 that is good for preventing leeching into the water or
16 the ground below it?
17 A Yes, yes.
18 Q Now if you turn to page 15 of your answers to
19 interrogatories there, right at line 7, answer,
20 subsection (a), do you see that?
21 A Yes.
22 Q Okay. Can you just read that to yourself?
23 (Pause.)
24 THE DEPONENT: Just that first paragraph?
25 ///

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1 BY MR. GALLIK:
2 Q Yes, sir.
3 A Okay.
4 Q Have you had a chance to read that?
5 A Yes.
6 Q Starting at approximately line 10-1/2 -
7 A Okay.
8 Q - see where it starts out, "In addition"?
9 A Yes.
10 Q In addition, farming practices may have permitted
11 various chemicals and minerals to leech into the
12 groundwater. Did you see that?
13 A Yes.
14 Q So as I understand it, that's Murphy's statement
15 of possible sources of significant pollution to the
16 underground aquifer; is that correct?
17 MS. OSTBY: The answer stands. I mean, the
18 answer speaks for itself. That's a simplification of
19 it, but it's a long interrogatory request, and it's a
20 long answer. I don't think he can be fairly asked to
21 characterize it. It speaks for itself.
22 BY MR. GALLIK:
23 Q What's the purpose of explaining to us why
24 farming practices may have contributed to elevated
25 levels of certain chemicals?

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1 MS. OSTBY: The purpose was to answer your
2 interrogatory.
3 MR. GALLIK: All right.
4 BY MR. GALLIK:
5 Q Is that your understanding?
6 A Yes.
7 What was the interrogatory?
8 MS. OSTBY: It was Interrogatory -
9 BY MR. GALLIK:
10 Q If the damages were the result of natural causes.
11 A Or were caused by the plaintiffs themselves. We
12 don't know what the cause -
13 MS. OSTBY: Wait, wait, wait. What was the
14 question? What was the question?
15 MR. GALLIK: There wasn't one.
16 THE DEPONENT: Okay.
17 BY MR. GALLIK:
18 Q So you don't know what the cause of elevated
19 levels of chemicals and minerals in the groundwater
20 may be?
21 A No.
22 Q Okay. And in this answer, you're setting forth
23 possible explanations; is that correct?
24 A That's correct.
25 Q Okay. And one of those explanations that you're

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1 providing is farming practices, correct?
2 A Correct.
3 Q Okay. And in terms of that answer, that farming
4 practices may have permitted various chemicals to
5 leech into the groundwater, what type of investigation
6 has Murphy done to validate or investigate whether
7 that's even a possibility?
8 MS. OSTBY: I object to the extent that
9 calls for work product. The time for expert
10 disclosures is months away, so I would instruct the
11 witness that he's not obligated to reveal anything
12 that's been discussed with counsel in terms of
13 preparation for the defense of this lawsuit.
14 BY MR. GALLIK:
15 Q Okay. Aside from discussing it with counsel, do
16 you have any independent knowledge of farming
17 practices that may have permitted leeching?
18 A I don't know of anything at this point, no.
19 Q Okay. So if the farming practices that we're
20 talking about here - well, let me strike that.
21 Do you know what type of farming practices you're
22 even talking about in that answer?
23 MS. OSTBY: Well, it doesn't say a specific
24 type. It just says that they may have. The answer
25 speaks for itself.

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1 MR. GALLIK: That's why I'm asking.
2 MS. OSTBY: Do you have anything to add here
3 with respect to farming practices?
4 THE DEPONENT: No, I don't.
5 BY MR. GALLIK:
6 Q So the property on which the farmers are
7 conducting their farming practices is also the same
8 clay-type material. Are you saying that the clay will
9 allow the chemicals to get into the groundwater but
10 not saltwater?
11 MS. OSTBY: I object. That calls for
12 speculation. It's beyond the expertise of this
13 witness.
14 BY MR. GALLIK:
15 Q Do you know?
16 MS. OSTBY: There's no foundation.
17 THE DEPONENT: I don't know.
18 BY MR. GALLIK:
19 Q Okay. Your next explanation, or the next portion
20 of the answer is that, "In addition, precipitation
21 levels in the East Poplar Unit area or in the aquifer
22 recharge area and man-made restrictions on the level
23 of flow within the Poplar River may have all acted to
24 impact the quality and quantity of the aquifer lying
25 beneath the East Poplar Unit area."

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1 Can you tell me what that says? What does that
2 mean?
3 MS. OSTBY: You know, can I just make clear
4 here, and maybe we should do this on the record. I
5 don't know that this is within the scope of a 30(b)(6)
6 deposition notice, even though it was so broad that it
7 seemed to cover everything and anything, but I assume
8 this constitutes a fact discovery deposition of
9 Mr. Campbell, too, and that he's not going to be
10 called back for a second deposition, a second fact
11 deposition in addition to this? This constitutes
12 both? I want that clear so that I don't need to be –
13 MR. GALLIK: Well, he signed – these are
14 his answers.
15 MS. OSTBY: He did, but this is a 30(b)(6)
16 deposition, and you're asking questions as if it's a
17 fact deposition of Mr. Campbell, and if you want to
18 say it's both, then we'll go on.
19 MR. GALLIK: If you want to do a fact
20 deposition later, we can do that, if he's not
21 prepared.
22 MS. OSTBY: Well, then, let's stick to the
23 30(b)(6) now.
24 MR. GALLIK: He's not prepared to answer
25 that?

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1 MS. OSTBY: I didn't say that.
2 THE DEPONENT: I'm not prepared to answer
3 that at this point in time.
4 BY MR. GALLIK:
5 Q So you don't know?
6 A No.
7 Q Okay. Same question for subparagraph (b) on how
8 the plaintiffs, through farming practices, may have
9 contributed to the groundwater's problems now being
10 encountered.
11 MS. OSTBY: What's the question?
12 BY MR. GALLIK:
13 Q Same question. What type of investigation have
14 you done personally or Murphy – I don't want to get
15 into the work product, but what evidence do you have
16 that the plaintiffs may have contributed to their own
17 water pollution?
18 A I don't have any evidence at this point in time.
19 Q In the last sentence of your answer to
20 subparagraph (a), do you see that?
21 A About 15 there, 14?
22 Q Yeah. Do you see that?
23 A Yeah.
24 Q "The aquifer lying beneath the East Poplar Unit
25 area"? I think we had a discussion early on about

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1 sands versus aquifer. Do you recall that?
2 A Yes.
3 Q Now in this answer, you seem to indicate that
4 there is an aquifer lying beneath the East Poplar Unit
5 area.
6 A That's my understanding as defined by the USGS
7 studies, yes.
8 Q And do you have a quarrel with the USGS
9 definition of an aquifer lying beneath the East Poplar
10 Unit area?
11 A No, I don't.
12 Q Okay. Has, to your knowledge, Murphy conducted
13 any investigation as to whether any other oil or gas
14 companies which it owned, or operated wells within the
15 units, also contributed to the alleged changes in
16 groundwater quality?
17 MS. OSTBY: Excluding any work product.
18 BY MR. GALLIK:
19 Q (Nodded head affirmatively.)
20 A Not to my knowledge.
21 Q A couple weeks ago, we took the deposition of the
22 Pioneer representative, and they are engaged in a
23 program of investigation into possible sources of
24 contamination of the groundwater in the East Poplar
25 Unit. Is Murphy currently involved in any

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1 investigation into possible sources of groundwater
 2 contamination in the East Poplar Unit?
 3 A We're in the process of beginning to evaluate an
 4 investigation program for the area.
 5 Q And what does that evaluation consist of?
 6 MS. OSTBY: I object. I think that's all
 7 work product. You know that Murphy has had
 8 Mr. Osborne up doing work. I mean, he has worked with
 9 your people and been on the properties of the
 10 plaintiffs. So I'm not sure where you're going with
 11 it. I mean, there's clearly been work that Murphy has
 12 been doing up there.
 13 BY MR. GALLIK:
 14 Q Is that work, then, in connection with the
 15 lawsuit, or are you doing something independent of the
 16 lawsuit?
 17 A It's in connection with the lawsuit.
 18 Q Okay. Does that involve the drilling of wells?
 19 A Yes.
 20 Q Okay.
 21 MS. OSTBY: You have the -- you've been
 22 given samples.
 23 MR. GALLIK: I think Dick has been dealing
 24 with that.
 25 MS. OSTBY: Yes.

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1 BY MR. GALLIK:
 2 Q Other than the plaintiffs in this particular
 3 litigation, to your knowledge, has Murphy ever
 4 received complaints from other people or entities
 5 concerning the groundwater quality in the general area
 6 of Murphy's operations in the unit?
 7 A Yes.
 8 Q Okay. And who would that be?
 9 A Bud Lien.
 10 MS. OSTBY: L-i-e-n.
 11 BY MR. GALLIK:
 12 Q And I'm familiar with that case, but aside from
 13 Mr. Lien, are there any other people or entities?
 14 A I'm not aware of any, no.
 15 Q Okay. Has Murphy, to your knowledge, ever
 16 received any written complaint from any regulatory
 17 agency about its operations in the East Poplar Oil
 18 Field?
 19 MS. OSTBY: Of any kind?
 20 BY MR. GALLIK:
 21 Q Of any kind.
 22 A Complaints?
 23 Q Correct.
 24 A I mean, I don't understand -- we get, you know,
 25 correspondence from them from time to time, but I

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1 don't understand, you know, what you mean by a
 2 complaint.
 3 Q Okay. That's fair. Is there an administrative
 4 process by which an administrative agency, if they
 5 have a problem with how you're conducting your
 6 operations, say you're violating a regulation --
 7 A Right.
 8 Q -- is there a process that you're aware of by
 9 which that agency says to Murphy, "Stop that" or
 10 "You've got a problem here"?
 11 A Yes.
 12 Q Okay. What is that process?
 13 A With the EPA?
 14 Q (Nodded head affirmatively.)
 15 A It's a followup generally from their inspection.
 16 They do announced and unannounced inspections, and
 17 from their inspections, based on the field supervisor
 18 or whoever is there with the EPA, if they've got
 19 things that they see that we need to change or they
 20 interpret that we're not doing according to the
 21 permit, then they will generally issue us a letter
 22 saying that, "We would like for you to change this,"
 23 or, in some cases, they, you know, may fine us if it's
 24 something that they feel like is a sufficient for a
 25 fine.

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1 Q Okay. Does the EPA just show up unannounced,
 2 usually?
 3 A Not usually, but they have on occasions just
 4 shown up.
 5 Q Usually it's a scheduled appointment?
 6 A Usually it's scheduled.
 7 Q Okay. And is there a routine time frame in which
 8 they show up to inspect or --
 9 A Not to my knowledge, no.
 10 Q They just give you a courtesy call and say, "Hey,
 11 we're coming up"?
 12 A Yes.
 13 Q Do they tell you which wells they want to take a
 14 look at?
 15 A Typically not, no.
 16 Q Do you know approximately how many operating
 17 wells Murphy currently has in the East Poplar unit?
 18 A Approximately, operating?
 19 Q Yes.
 20 A In the area, 50.
 21 Q Okay. Are there any saltwater or produced water
 22 disposal wells currently operating in the East Poplar
 23 field?
 24 A Yes.
 25 Q How many of those?

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1 A There's four active wells.
 2 Q By looking at this map that's in front of you
 3 here, can you identify where those wells would be
 4 located, those four active saltwater disposal wells?
 5 If you want to go off the record and take some time, I
 6 don't know how familiar you are with the map.
 7 A Somewhat familiar.
 8 Q Do you want to circle those?
 9 A Circle them? (Complied with request.)
 10 MS. OSTBY: Brian, while he's thinking about
 11 that, why don't we talk about your lunch plans.
 12 MR. GALLIK: We can take a break.
 13 (Discussion off the record.)
 14 BY MR. GALLIK:
 15 Q Go ahead. Do you want to go ahead and explain
 16 what you've done on Exhibit 51 with respect to the
 17 green markings?
 18 A I've taken the green marker and marked the four
 19 active wells, which are the Murphy 5-D, the Murphy
 20 1-D, the Murphy 80-D, and the Huber 5-D. And there's
 21 a permitted well, but it's not currently active, which
 22 is the Murphy 8-D.
 23 MR. GALLIK: Thank you.
 24 (Recess taken from 12:16:17 to 13:37:43.)
 25 ///

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1 BY MR. GALLIK:
 2 Q Prior to the break for lunch, you identified in
 3 green on Exhibit 51 a number of saltwater disposal
 4 wells, correct?
 5 A Yes.
 6 Q And the Huber 5-D well, although active, is not
 7 in use technically; is that correct?
 8 A No, the Huber 5-D is active and in use. The
 9 Murphy 8-D is inactive but currently still usable.
 10 Q Okay. Now looking at Exhibit 63, which lists
 11 saltwater disposal wells, there are two saltwater
 12 disposal wells, 29-D and 59-D, that were used at
 13 various times. Do you see those?
 14 A Yes, sir.
 15 Q Okay. Taking the purple pen, can you identify
 16 those on the map for me?
 17 A I'll try.
 18 (Discussion off the record.)
 19 MR. GALLIK: Back on the record.
 20 BY MR. GALLIK:
 21 Q I'm handing you now the orange pen. If you could
 22 identify in orange the disposal pits that have been
 23 identified in your answers to interrogatories?
 24 A Pits A through -- or Tank Batteries A through Q.
 25 MS. OSTBY: If you can.

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1 MR. GALLIK: Off the record.
 2 (Discussion off the record.)
 3 MR. GALLIK: Back on the record.
 4 BY MR. GALLIK:
 5 Q Okay. In orange you've marked on the record, or,
 6 I'm sorry, on the Exhibit 51 the tank batteries
 7 identified in your answers to interrogatories; is that
 8 correct?
 9 A I've tried to identify all those through that
 10 area, yes.
 11 Q Okay. And those tank batteries that you've
 12 identified in orange would be those with which were
 13 associated disposal pits; is that correct?
 14 A Yes.
 15 Q And there may be other disposal pits, but they're
 16 not relevant to this discussion, I take it?
 17 A That's correct.
 18 Q Okay. One final bit of coloring I'd like you to
 19 do. If you'd turn to page 7 --
 20 A Okay.
 21 Q -- the pressure maintenance wells, before I ask
 22 you to color those, just, in general, what is a
 23 pressure maintenance well?
 24 A There was a pressure maintenance program that was
 25 instituted sometime in the '50s, late '50s, to the

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1 best of my recollection, to try to enhance the
 2 production, oil production, from the unit by keeping
 3 the pressure up in the reservoir.
 4 Q Okay. So we've talked about that before?
 5 A That's correct.
 6 Q Okay. I'll hand you a blue pen. If you could
 7 identify those pressure maintenance wells, please?
 8 We can go off the record.
 9 (Discussion off the record.)
 10 MR. GALLIK: Back on the record.
 11 BY MR. GALLIK:
 12 Q You've identified, in blue, pressure maintenance
 13 wells, and when I look at the deposition answer and
 14 compare it to what's on the map, there's a little bit
 15 of difference with respect to --
 16 A Yes.
 17 Q -- the designation. With respect to the East
 18 Poplar Unit Well No. 23, could you say for the record
 19 which well that's designated as on the exhibit?
 20 A Murphy 23.
 21 Q And East Poplar Unit Wells 46 and 59 would be
 22 what on this?
 23 A The EPU or East Poplar Unit 46 is the Murphy 46
 24 in Section 25.
 25 Q Okay.

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1 A The Murphy 59 is the same as East Popular Unit
2 Well No. 59, which is the same as Saltwater Disposal
3 Well No. 59.

4 Q Okay. The Owens-Simons well?

5 A The Owens-Simons is, Murphy in prens,
6 Owens/Simons 1, and looks like it's maybe in the
7 southeast corner of Section 16.

8 Q And the Rehder well?

9 A Rehder is the Murphy (Empire State) Rehder 7 in
10 the northeast part of 16, or looks like maybe in the
11 northwest part of 16.

12 Q And the Smith well is the Empire State Smith?

13 A The Murphy (Empire State) Smith 1.

14 Q Just so we can read this easily, if you could
15 just make a little legend at the bottom? Next to the
16 green color, if you could - those would be the active
17 saltwater disposal wells, correct?

18 A Yes, or currently permitted and active disposal
19 wells.

20 Q I'm handing you the orange pen now. Those would
21 be the disposal pits, correct?

22 A These would be the tank battery pits used for
23 disposal.

24 Q And I'll hand you the purple pen. I believe
25 those are the two saltwater disposal wells that are no

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1 longer in use.

2 And, finally, the blue pen, I believe, are the
3 pressure maintenance wells.

4 A Okay.

5 Q Thank you.

6 A Yes, sir.

7 Q Before lunch and before we were talking about the
8 map, I believe I was asking you some questions about
9 other complaints from landowners concerning problems
10 with water. I think you identified Bud Lien; is that
11 correct?

12 A That's correct.

13 Q You are aware, of course, that our clients are
14 complaining about the groundwater in the area,
15 correct?

16 A Correct.

17 Q Okay. When did Murphy first become aware that
18 landowners in the vicinity of its operations were
19 making complaints about groundwater?

20 A I'm not sure. I'm not aware of the time when
21 they made their complaint.

22 Q Okay. Let me ask it this way. Did Murphy first
23 become aware, if you know, of complaints by these
24 people by virtue of them filing a lawsuit?

25 A That's my first knowledge of it, yes.

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1 Q To your knowledge, did Murphy at any time inform
2 any landowners in the area that its operations in the
3 unit might be causing an impact to the groundwater
4 below them in terms of pollution?

5 A Can you restate the question?

6 Q Sure. To your knowledge, did Murphy at any time
7 ever inform any landowners in the area of its
8 operations in the East Poplar Oil Field that the
9 groundwater below their property might be impacted by
10 saltwater?

11 A I don't know. Not to my knowledge.

12 Q Same question with respect to oil. To your
13 knowledge, has Murphy ever informed any landowners in
14 the area of its operations in the East Poplar Oil
15 Field that the groundwater below their property might
16 be impacted by oil resulting from oil and gas
17 explorations?

18 A Not to my knowledge, no.

19 Q You're aware, of course, that the EPA is also
20 involved in this particular action, correct?

21 A Yes, sir.

22 Q And they have filed I think what's known as an
23 administrative action?

24 A Emergency administrative order, yes.

25 Q And how has Murphy responded to the EPA's

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1 administrative order?

2 A I don't understand what you're asking, I guess.

3 Q Well, the EPA order required Murphy to take
4 certain actions, correct?

5 A That's correct.

6 Q Okay. And what were those actions that EPA
7 requested or ordered that Murphy take?

8 A The only action that we had to take was to
9 furnish potable water to the residents that were in
10 the area defined by the EPA as the area of concern
11 within the emergency order.

12 Q Okay. And has Murphy done that?

13 A Yes, we have.

14 Q And is Murphy doing that today as we speak?

15 A Yes, we are.

16 Q Are other oil companies in the area assisting
17 Murphy in the supply of water to residents in the
18 area?

19 A The answer to that is no, but I'll qualify that
20 answer. There is no agreement as to how to share the
21 cost, so, therefore, Murphy is carrying that cost at
22 this point in time.

23 Q Okay. Has Murphy attempted to reach an agreement
24 with other oil companies about sharing that cost?

25 A Not to my knowledge, no.

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1 Q Can you tell me why Murphy, if you know, is the
2 one that's paying for the cost of water when there are
3 other people identified in the order as also being
4 responsible for providing water?

5 MS. OSTBY: Because it's such a good
6 company. It speaks for itself.

7 MR. ROSS: We provided doughnuts at the last
8 depo.

9 MR. GALLIK: That's right. You did.

10 THE DEPONENT: The main reason Murphy is
11 doing it is because we have personnel in the area to
12 facilitate or to help facilitate and monitor the
13 distribution of the water. We have a third party
14 doing the distribution, but it was much simpler for us
15 to manage that, having an operation in the area, a
16 currently active operation.

17 BY MR. GALLIK:

18 Q Okay. So Murphy volunteered -

19 A That's correct.

20 Q - due to the infrastructure in place up in the
21 area?

22 A That's correct.

23 Q Okay. Does Murphy have any current or former
24 employees, to your knowledge, that live in the East
25 Poplar Oil Field unit?

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1 A We have one former employee that I know lives in
2 the general area of the unit. I'm not sure if his
3 property that he resided on is within the unit
4 boundary, but it's very close.

5 Q Okay. And do you know the name of that former
6 employee?

7 A Tim Trottier.

8 Q Okay.

9 A And he is deceased.

10 Q Do you know when he passed away?

11 A This spring.

12 MS. OSTBY: Within the last year.

13 THE DEPONENT: Within the last year. This
14 spring.

15 BY MR. GALLIK:

16 Q What was Mr. Trottier's former position, if you
17 know?

18 A He was a pumper.

19 Q He would be one of those people that would have
20 had knowledge about historical background of the
21 units?

22 A I don't know how much knowledge he would have
23 had, but he's been there a long time. He would have
24 some historical knowledge of the operations, yes.

25 Q Did Mr. Trottier ever say anything to Murphy, to

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1 your knowledge, about the quality of his water?

2 A No. The water that he had at the time of the
3 lawsuit was good water.

4 Q And to your knowledge, it's still good water?

5 A As far as I know, it's still good water.

6 Q Did Murphy ever help him with any treatment
7 systems for his water?

8 A No, not to my knowledge.

9 Q Okay. Has Murphy provided, aside from bottled
10 water to some of the people in the East Poplar Unit,
11 has Murphy taken any other steps to provide water or
12 clean water to people in the area?

13 A Not to my knowledge, no.

14 Q It's my understanding that Samson Hydrocarbons
15 has appealed at least some of the EPA's administrative
16 order. Are you aware of that?

17 A Yes, I'm aware of that.

18 Q Is Murphy a part of that appeal, to your
19 knowledge?

20 A To my knowledge, no.

21 Q If you could turn to page 14 of Exhibit 63? The
22 answer to Interrogatory No. 4, the last sentence which
23 starts at approximately line 15, do you see that?

24 A Yes, sir.

25 Q And I'll just read it, quote, "Thus Murphy E&P

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1 admits that some, but not all, of the water underlying
2 the East Poplar Oil Field would not satisfy secondary
3 drinking water quality standards."

4 A Yes, sir.

5 Q Does that mean that the water is polluted?

6 MS. OSTBY: I'm going to object. It's vague
7 and ambiguous. Undefined. You can answer.

8 THE DEPONENT: It means it wouldn't meet
9 secondary drinking water standards.

10 BY MR. GALLIK:

11 Q Earlier on in the deposition you gave me a
12 definition of "significantly polluted" or "polluted."
13 Would that satisfy your definition of "pollution" or
14 "significant pollution"?

15 MS. OSTBY: Does water that does not meet
16 the secondary drinking water standards meet the
17 definition he gave you earlier?

18 MR. GALLIK: Yes.

19 MS. OSTBY: Do you understand the question?

20 THE DEPONENT: As polluted, not necessarily,
21 no.

22 BY MR. GALLIK:

23 Q Same question with regard to significantly
24 polluted.

25 A Not necessarily, no.

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1 Q And "not necessarily" for what reason?
 2 A Well, pollution has a different connotation than,
 3 you know, it doesn't satisfy secondary drinking water
 4 standards. There's multiple reasons why it may not
 5 meet secondary drinking water standards.
 6 Q No, I understand that.
 7 A So I guess I really don't understand, you know,
 8 what the question is.
 9 Q If the water underlying the East Poplar Oil Field
 10 does not satisfy secondary drinking water quality
 11 standards, does that mean that it's polluted as you
 12 defined it earlier on in the deposition?
 13 A No.
 14 Q Is the water underlying the East Poplar Oil Field
 15 polluted with saltwater?
 16 MS. OSTBY: What water are you talking
 17 about?
 18 MR. GALLIK: This is coming out of your
 19 answer.
 20 MS. OSTBY: Which answer are you talking
 21 about?
 22 MR. GALLIK: Interrogatory 4.
 23 MS. OSTBY: Are you drawing his attention
 24 still to the last sentence only or -
 25 ///

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1 BY MR. GALLIK:
 2 Q I'm using your language, and I don't want to
 3 argue about these things.
 4 A It says some, but not all, of the water
 5 underlying the East Poplar unit would not satisfy
 6 secondary drinking water standards.
 7 Q Is some of the water underlying the East Poplar
 8 Oil Field polluted with saltwater?
 9 MS. OSTBY: Objection. Asked and answered.
 10 THE-DEPONENT: Some of the water, as defined
 11 by the USGS study, contains high concentrations of
 12 chlorides underlying the East Poplar unit area, which
 13 makes it above the secondary drinking water standards.
 14 BY MR. GALLIK:
 15 Q Okay. But not necessarily polluted?
 16 A Not necessarily polluted, no, sir.
 17 Q When did Murphy learn or discover, I'll use your
 18 language, that some of the water underlying the East
 19 Poplar Oil Field would not satisfy secondary drinking
 20 water quality standards?
 21 A That's in reference to page 14?
 22 Q Yes.
 23 A I don't know. I mean, I just don't know.
 24 Q Okay. How did Murphy learn that some of the
 25 water underlying the East Poplar Oil Field would not

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1 satisfy secondary drinking water quality standards?
 2 A Sometime during one of the publications, perhaps
 3 the publication of the USGS study.
 4 Q Once Murphy learned that some of the water
 5 underlying the East Poplar Oil Field would not satisfy
 6 secondary drinking water quality standards, what did
 7 Murphy do with that knowledge?
 8 A We continued to support the USGS in their study
 9 efforts.
 10 Q You used the word "continued." Had you been
 11 supporting the USGS study efforts prior to the
 12 publication of their report?
 13 A Yes.
 14 Q Okay. How did that begin?
 15 A I don't know exactly how it began other than they
 16 started studying and we started supplying them basic
 17 information for their maps, helping them get around
 18 the field, identify the old locations of the tank
 19 batteries so that they could place their monitoring
 20 wells.
 21 Q Do you recall why or do you know why the USGS
 22 approached Murphy for information concerning its
 23 operations in the East Poplar Oil Field?
 24 A No, I don't.
 25 Q Were you personally involved with assisting the

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1 USGS in its investigation of the East Poplar Oil
 2 Field?
 3 A No.
 4 Q Do you know who in your office would have been?
 5 A I was not personally involved. Ray Reede had
 6 most of the contact with the USGS.
 7 Q Mr. Reede is from Poplar, Montana?
 8 A Yes, and I gave him approval, or the manager
 9 prior to me, Paul Ramsey, gave him approval to, you
 10 know, cooperate and do whatever is necessary to supply
 11 him information that we had that could support their
 12 study.
 13 Q Okay. And I know you can't tell me the specific
 14 date that that started, but do you recall generally
 15 when you gave the approval to Mr. Reede to cooperate?
 16 A I don't remember if I gave approval to Mr. Reede
 17 or someone else did, but it would have been sometime
 18 in the '80s. I don't remember specifically when.
 19 Early to mid '80s is what I remember, but I don't have
 20 any recollection of any specific date or time.
 21 Q Okay. Did Murphy make any inquiry of the USGS as
 22 to why it was interested in conducting the study?
 23 A Not to my knowledge, no.
 24 Q Does Murphy know why some of the water underlying
 25 the East Poplar Oil Field would not satisfy secondary

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1 drinking water quality standards?
 2 A No.
 3 Q Prior to the filing of this litigation, did
 4 Murphy have any monitoring wells installed on its
 5 property to determine if its operations were causing
 6 or contributing to groundwater pollution?
 7 A Not to my knowledge, no.
 8 Q From Murphy's standpoint, should that have been
 9 something the landowner installed?
 10 A If he was concerned about it, he should have,
 11 yes.
 12 Q Sir, in terms of your work as a petroleum
 13 engineer - is that what you testified to?
 14 A By degree, yes.
 15 Q - and your work up in this particular area, that
 16 being the East Poplar Unit, have you become acquainted
 17 with the general underground geology of the area?
 18 A Some of the geology, primarily the oil producing
 19 geology.
 20 Q For example, if I talk about the Tyler formation
 21 or the Kibby formation?
 22 A Kibby, I'm familiar with. The Tyler, I'm not
 23 sure. I think that's probably the Heath formation,
 24 that we classify as Heath, but I am not sure if that's
 25 the same equivalent or not.

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1 Q Can you tell me whether the formation pressure in
 2 the Tyler formation would flow a saltwater column to
 3 the surface in 1970?
 4 A I'm not sure. I don't know.
 5 Q Same question and same time for the Kibby
 6 formation.
 7 A The Kibby, I don't know.
 8 Q Isn't it true that the Charles formation would
 9 flow saltwater to the surface in the area where your
 10 operations were conducted in the East Poplar Oil
 11 Field?
 12 MS. OSTBY: In 1970, again? Same time?
 13 BY MR. GALLIK:
 14 Q No. No time restriction.
 15 A To the best of my knowledge, in certain areas of
 16 the field, the Charles formation, just the Madison/
 17 Charles formation, will support a column of fluid and
 18 will flow to the surface today, and it would have in
 19 the early stages of production in the field.
 20 Q Okay. Would the Judith River formation allow the
 21 flow of saltwater to the surface in the area where
 22 Murphy conducted its operations in the East Poplar Oil
 23 Field?
 24 A To the best of my knowledge, it would, yes.
 25 Q Okay. Is the Judith River formation a

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1 freshwater-bearing zone in the area of the East Poplar
 2 Oil Field?
 3 A In my opinion, no.
 4 Q Why not?
 5 A Chloride samples that we have from the Judith
 6 River in the early stages of development of the field
 7 indicated that it was chlorides above 10,000 parts per
 8 million and was productive of hydrocarbon gas.
 9 Q In the oil production business, and when you work
 10 in an oil field, is there a base of freshwater that
 11 underlies some fields?
 12 A That's a fairly accurate statement, yes.
 13 Q Okay. And we've talked about potable water
 14 before underlying the East Poplar Oil Field. What
 15 does Murphy consider to be the base of freshwater
 16 below its oil and gas operations in the East Poplar
 17 Oil Field?
 18 A It would be our opinion that it's the top of the
 19 Bear Paw shale.
 20 Q Okay. And why, in your opinion, is that, in
 21 Murphy's opinion, the base of the freshwater?
 22 A The Bear Paw shale is a marine environment shale,
 23 a saltwater shale, and the Judith River appears to be
 24 a marine environment sandstone.
 25 Q Okay. From your experience in the oil industry

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1 and Murphy's experience in the oil industry and in the
 2 East Poplar Oil Field, is corrosion a problem that is
 3 associated with handling of saltwater in pipes and
 4 equipment?
 5 A Yes.
 6 Q Okay. Why is that?
 7 A Well, multiple reasons, but saltwater primarily
 8 creates a current flow which will remove the electrons
 9 from the metal and cause the metal to lose some of its
 10 mass and then will be carried with the saltwater as
 11 iron, and then you wind up with erosion or corrosion
 12 combination of metals with saltwater.
 13 Q Is that one of the reasons why, with respect to
 14 the pipelines that you have in the area, some of them
 15 have been changed from a metal to a concrete,
 16 asbestos-type pipeline?
 17 A That was some of the reasons, yes.
 18 Q Earlier we talked about Murphy's procedures or
 19 policies with respect to inspection of casing or
 20 testing of casing for leaks. Do you recall that
 21 discussion?
 22 A Yes.
 23 Q Aside from - and casing, I take it, is subject
 24 to erosion and corrosion just like any other metal
 25 from saltwater, correct?

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1 A Correct.
2 Q Are there other parts of the oil operation in the
3 field that are also, aside from the casing, subject to
4 erosion and corrosion from saltwater?
5 A All metal equipment, vessels that come in contact
6 with the saltwater.
7 Q So that would include pipelines?
8 A It would include flow lines. We don't call them
9 pipelines, but flow lines. Yes.
10 Q Okay. On a disposal well itself – and I've
11 never seen one.
12 A Yes, sir.
13 Q – what other metal parts are there on a
14 saltwater disposal well that would be subject to
15 corrosion aside from the casing that goes into the
16 ground?
17 A The tubing.
18 Q (Nodded head affirmatively.)
19 A The wellhead.
20 Q (Nodded head affirmatively.)
21 A The injection line, the pump, and the tanks.
22 Q Okay. And in terms of inspecting those parts of
23 the system, does Murphy have a policy or procedure
24 with respect to checking for erosion or corrosion of
25 those parts?

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1 A We don't have a particular policy other than just
2 the visual daily inspections and monitoring of the
3 equipment.
4 Q In terms of inspecting a well for leaks or
5 erosion and corrosion, we've talked about the casing,
6 correct –
7 A Yes.
8 Q – and the other aspects of the well unit itself
9 that are subject to corrosion, correct?
10 A (Nodded head affirmatively.)
11 Q From Murphy's standpoint, what's the most
12 important part of the operation that should be checked
13 for corrosion or erosion?
14 A I don't know that there is an answer to that
15 question. All of the components are important, you
16 know, and current operations, the most important thing
17 is the pressure on the annular space between the
18 tubing and the casing.
19 Q Okay. And why is that?
20 A It's just a – it's a good monitoring tool to
21 determine when you have communication between the
22 tubing, which is your injected fluid, and your casing
23 annulus, which is a static fluid.
24 Q Okay. You would agree that the water, the
25 saltwater, the produced water with high concentrations

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1 of sodium chloride, could significantly pollute a body
2 of water if it's small enough, I assume?
3 A It can significantly impact the chlorides. I'm
4 not sure I would define that as pollution, but that's
5 a definition term.
6 Q Okay. And in terms of the well, and I'm speaking
7 now in terms of the casing below the ground and
8 everything on top that you explained to me, if an oil
9 company is concerned about making sure that that
10 produced water is not escaping into an underground
11 aquifer, of all those components that we've talked
12 about, what is the most important component that
13 should be checked to make sure it's not corroded to
14 allow the escape of saltwater?
15 MS. OSTBY: Objection. Asked and answered.
16 THE DEPONENT: Yes.
17 MS. OSTBY: He just told you it's all
18 important, but –
19 THE DEPONENT: But the annular space is the
20 most important, but there's no inspection that's
21 necessary. It's only an observation of the pressure
22 at that point.
23 BY MR. GALLIK:
24 Q In terms of helping me understand where that
25 annular space is, where is that, if you could describe

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1 for me? Is it the top of the casing?
2 A No. The annular space is from the top of the
3 wellhead, which is at the surface of the ground, down
4 to the disposal packer, which is the seal between the
5 tubing and the casing, which then allows that annular
6 space to be a static environment with no, no injection
7 pressure subjected to that annular space. So the
8 annular space is like a doughnut that would go from
9 the top of the ground to the packer itself, which is
10 within 100 feet of the top of the perforations of the
11 permitted disposal interval. So it's a volume. It's
12 a capacity. It's like a cylinder.
13 Q Okay. So that's underground, I take it?
14 A It is underground.
15 Q When you say within 100 feet of the disposal
16 area, that can change, I take it, depending upon the
17 depth of the permitted disposal area?
18 A That's correct.
19 Q So it could be 5000 feet or 50 feet, in theory?
20 A In theory.
21 Q So that portion –
22 A Not likely 50 feet, but –
23 Q I understand.
24 A – but in theory, yes.
25 Q Just so I understand the concept.

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1 A That's correct.
 2 Q So that would be from the surface to within
 3 100 feet of the disposal zone?
 4 A Correct.
 5 Q And is that where the casing is located, too?
 6 A Yes.
 7 Q Okay. Are containment dikes important?
 8 A Yes.
 9 Q Why is that?
 10 A In case of accidents around tanks, then the fluid
 11 is contained in a small area.
 12 Q Okay. And is it Murphy's policy to have
 13 containment dikes on its facilities in the East Poplar
 14 Unit?
 15 A Yes.
 16 Q Earlier I handed you a copy of this environmental
 17 assessment, Exhibit 62. Do you recall, I think I
 18 asked you, do you recall -- you received this sometime
 19 after it was published in May of '99, correct?
 20 A That's my recollection, yes.
 21 Q Did Murphy make any response to this particular
 22 report?
 23 A Yes, we did.
 24 Q And what was that?
 25 A I don't remember the specifics, but we did

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1 respond to the report and did some actual things that
 2 they suggested, cleaned up some of the things we were
 3 already doing or were doing.
 4 Q Let's go to page 19, the recommendations. Do you
 5 see that there?
 6 A Yes, sir.
 7 Q Okay. By the way, is it your understanding that
 8 this report was done on behalf of the tribes?
 9 A That was my understanding, yes.
 10 Q And were you involved in the response to this
 11 report, or was there someone else at Murphy that was
 12 involved in that?
 13 A I was involved in the response.
 14 Q Did you work directly with the tribes or their
 15 attorneys, if you know?
 16 A Directly with both.
 17 Q Okay. And who at the tribe did you primarily
 18 work with?
 19 A Debbie Madison, I believe.
 20 Q Okay. If you look at Section 8, there is a
 21 number of recommendations based upon their report.
 22 The first one suggests that they "should press Murphy
 23 to P&A" -- is that "plug and abandon"?
 24 A That's what that generally means, yes.
 25 Q -- "any wells one year after their TA status

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1 begins." Is that temporary abandonment status?
 2 A That's correct.
 3 Q Did Murphy respond to that recommendation?
 4 A I don't remember that we responded to that
 5 specifically, no.
 6 Q Okay. You don't recall one way or the other?
 7 A I don't recall whether we did or didn't respond
 8 to that.
 9 Q Okay. The second recommendation, it doesn't
 10 apply to you.
 11 The third recommendation is, "Murphy should
 12 install and maintain berms on all active locations."
 13 Did Murphy respond to that recommendation?
 14 A We already had berms around active locations,
 15 which were our tank batteries, which are required by
 16 the EPA under the guidelines that they ask us to
 17 operate under. We have some of the wells bermed.
 18 They had a misconception that a berm on three sides
 19 was not a berm.
 20 Q And a berm on three sides is a berm?
 21 A It can be, yes, depending on the elevation of the
 22 ground. Our interpretation and theirs is slightly
 23 different.
 24 Q Okay.
 25 A But we have berms around most of the producing

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1 wells.
 2 Q So in terms of the difference in interpretation,
 3 you didn't reach an agreement on that, did you?
 4 A No, and we don't have to reach an agreement with
 5 them on that.
 6 Q No, I understand. But you didn't reach one?
 7 A Right.
 8 Q Okay. Part of the report talks about saltwater
 9 stressed areas. Do you recall that in the report?
 10 A Yes.
 11 Q What's a saltwater stressed area?
 12 A We would define that the same way they would.
 13 It's an area that has had a spill of saltwater on the
 14 surface that, just being a freshwater environment at
 15 the surface, and freshwater vegetation, saltwater
 16 stresses vegetation. It will kill some of the
 17 vegetation, and we define those as areas with low
 18 growth or no growth of grasses or vegetation.
 19 Q Okay. They make a recommendation here that the
 20 areas that they identified be reviewed during the
 21 spring of 1999. Have you or has anyone from Murphy,
 22 to your knowledge, reviewed any of the stressed areas
 23 that they identified in the report?
 24 A We have actively been involved in a program for
 25 probably ten years or better of trying to reclaim

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1 stressed vegetative areas --
 2 Q Okay.
 3 A -- things they defined, things we defined. I
 4 don't know that we've reached any agreement as to what
 5 areas were stressed and what were not stressed.
 6 Q So is it fair to say you had a different
 7 definition of "stressed area"?
 8 A I don't know that we had a different definition,
 9 but I don't know that we ever came to any conclusion
 10 as to what specific grounds, you know, were stressed.
 11 They identified some areas. It was some areas we were
 12 already familiar with and already working on.
 13 Q And what is the active program that you've been
 14 involved with for the past ten years?
 15 A Well, it primarily is cow and horse manure, which
 16 has a lot of bacteria, as well as straw and hay from
 17 the wintering of the livestock in some of the Poplar
 18 areas that Ray Reede is familiar with. And we take
 19 manure and have it -- we pay to have it hauled to the
 20 stressed vegetative areas, and we disk the ground and
 21 disk the material in to aerate and allow these
 22 stressed vegetated areas to hold moisture, to hold the
 23 bacteria, and to allow the ground to restore itself.
 24 It's been fairly effective.
 25 Q Okay. In terms of the areas that were identified

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1 in this report as being stressed, I recognize you may
 2 not agree with what they've identified, but are there
 3 other areas that were not identified in this report
 4 that Murphy has identified as being a stressed area?
 5 A Not that I'm familiar with, no.
 6 Q And just so I understand, there would be other
 7 areas that were stressed even under your definition
 8 but, because of the reclamation efforts that you made,
 9 would not have been identified; is that correct?
 10 A I don't know. I'm not following the question or
 11 the logic there.
 12 Q Well, my understanding is you've been doing this
 13 for ten years, correct?
 14 A We've been doing it plus or minus ten years, to
 15 my recollection, yes.
 16 Q And this report was issued in 1999?
 17 A Yes.
 18 Q And it identified stressed areas --
 19 A Correct.
 20 Q -- what they thought were stressed areas?
 21 A Correct.
 22 Q My question is this. And you've read the report?
 23 A Yes.
 24 Q And you've seen the locations that they've
 25 identified as being stressed?

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1 A I just don't remember the locations specifically.
 2 Q No, I understand. My question, though, is this.
 3 Are there other sites that were stressed but, because
 4 of the efforts made by Murphy --
 5 A I don't know that I can --
 6 MS. OSTBY: Whoa, whoa, whoa. He wasn't
 7 finished with his question.
 8 BY MR. GALLIK:
 9 Q -- as you've explained to me, that were
 10 reclaimed, and I'll use that word loosely --
 11 A Yes.
 12 Q -- and, therefore, were not identified in this
 13 report as a stressed area?
 14 A I think I understand your question, and I don't
 15 know the answer to that. I don't know if there were
 16 any other areas.
 17 Q Okay.
 18 A The areas stay stressed for a fairly long period
 19 of time. It takes four or five years or better for
 20 some of these areas -- you know, for the vegetation to
 21 recover, so things that they would have seen, we would
 22 have identified and been working on for several years.
 23 Q Okay. Have you personally viewed any of these
 24 stressed areas?
 25 A Yes.

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1 Q In terms of the stressed areas that you've
 2 personally looked at, can you give me an idea of the
 3 size of the area that we're talking about in acreage
 4 or in feet?
 5 A I don't recall.
 6 Q Less than an acre?
 7 A Probably more than an acre.
 8 Q Okay. And the stressed areas that you have
 9 personally seen, are they commonly associated with one
 10 part of the oil production facilities?
 11 A No.
 12 Q Okay. The stressed areas that you have
 13 personally seen in relation to the well itself, would
 14 they be, for example, 100 feet away, 200 feet away?
 15 A Away from what?
 16 Q The well production facility.
 17 A They would typically be where the saltwater had
 18 impacted the ground, where it had been spilled --
 19 Q Okay.
 20 A -- either flow line or tank battery.
 21 Q Okay. And the tank battery would be the items in
 22 orange that we've identified on this map, Exhibit 51?
 23 A Not specifically, no. It would probably be the
 24 current tank batteries --
 25 Q Okay.

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1 A -- or disposal batteries. Anything that were
2 handling fluid.
3 Q Okay. Turning to page 20 of the recommendation
4 report of Mr. Holm -- by the way, did you ever talk to
5 Mr. Holm yourself about this report?
6 A I don't recall whether I did or not. May have.
7 Q Recommendation 6 says the tribes "should require
8 that Murphy remove and properly dispose any split-ring
9 drums on tribal, allotted, or Indian-owned lands as
10 soon as possible." What's a split-ring drum?
11 A I'm not sure what his definition of a split-ring
12 drum is. It's typically a chemical drum --
13 Q Okay.
14 A -- that has a ring at the top --
15 Q And -- go ahead. I'm sorry.
16 A -- that allows that top to be removed.
17 Q And this would be a drum that would be used in
18 the context of oil production activities?
19 A That, I can't answer. Don't know. I mean, I
20 think that was his reference, but I specifically don't
21 know.
22 Q From your experience in the East Poplar Oil
23 Field, did you ever use or ever see Murphy employees
24 use split-ring drums on their property under lease?
25 A We have used drums, or drums were used with

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1 chemicals that were delivered for corrosion
2 inhibitors, scale inhibitors, things that we used for
3 treating the fluids. We haven't used drums in quite
4 some time.
5 Q Okay. With respect to Recommendation No. 6, did
6 Murphy take any action with respect to that
7 recommendation?
8 A We have always had a policy to try to pick up
9 drums. Drums can create a hazard for, you know,
10 leftover chemicals that are in the drums. We did make
11 an effort to remove any loose drums or drums that were
12 not in use and have those properly disposed of.
13 Q So that's one where you reached agreement on?
14 A I don't know if we actually reached an agreement,
15 but we did do the work.
16 Q Okay. Item No. 7, "Murphy should be required to
17 close any unused pits in accordance with appropriate
18 chemical and radioactivity data, and to fence, line,
19 and net those pits currently in use." The report
20 indicated there were some unused pits. Was that part
21 of the report accurate?
22 A Not to my knowledge, no.
23 Q Okay. So this is a recommendation that you
24 disagreed with, then --
25 A Yes.

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1 Q -- as Murphy, right?
2 A (Nodded head affirmatively.)
3 Q Okay. So I take it nothing was done with respect
4 to this recommendation because you disagreed with it?
5 A We had already closed quite a few pits.
6 Q Okay. Were there any left to be closed, to your
7 knowledge?
8 A Not to my knowledge.
9 Q Recommendation No. 8, "Tribal inspectors should
10 require Murphy to remove and reclaim or dispose the
11 abandoned equipment on tribal or allotted tracts
12 within the study area." Was there any abandoned
13 equipment within the study area that was the
14 responsibility of Murphy?
15 A In the sense that he's talking about abandoned
16 equipment, no.
17 Q Okay.
18 A There's some inactive equipment --
19 Q Okay.
20 A -- but it's still within the units or boundaries
21 of the unit, and the unit is still active. So in our
22 sense, it's not abandoned equipment. I think there's
23 a difference of opinion there.
24 Q On whether the property has been abandoned?
25 A No, on whether the equipment has been abandoned.

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1 Q I'm sorry; whether the equipment has been
2 abandoned?
3 A Right.
4 Q So you don't disagree there's equipment out
5 there; just whether it's been abandoned?
6 A That's correct.
7 Q If you could turn your attention to page 11 of
8 the report, Exhibit 62, Item 6.1 discussing
9 temporarily abandoned wells and facilities?
10 A Yes.
11 Q If you could read that to yourself?
12 MS. OSTBY: The whole thing or just the
13 first paragraph?
14 MR. GALLIK: Just that first paragraph.
15 (Pause.)
16 THE DEPONENT: Okay.
17 BY MR. GALLIK:
18 Q Okay. This talks about, so everyone else knows
19 what you're reading, talks about an apparent saltwater
20 leak at Well EPU-69; is that correct?
21 A Yes.
22 Q On the map, Exhibit 51, can you identify where
23 that particular well is?
24 A It may take me a few minutes to identify it.
25 Q Sure.

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1 MR. WEBSTER: Section 12, Sid.
 2 THE DEPONENT: Of township and range?
 3 MR. WEBSTER: 28-51.
 4 THE DEPONENT: Section 12?
 5 MR. WEBSTER: Yeah. Should be southwest,
 6 northeast. Is that right?
 7 THE DEPONENT: Huh-uh. It's not 29, huh?
 8 MR. WEBSTER: Is it 61?
 9 MS. OSTBY: Sixty-nine.
 10 MR. WEBSTER: I'm sorry. Sixty-nine is in
 11 Section 31 of 29-51.
 12 THE DEPONENT: Twenty-nine?
 13 MR. WEBSTER: Uh-huh.
 14 THE DEPONENT: Section 31?
 15 MR. WEBSTER: Uh-huh.
 16 THE DEPONENT: Okay.
 17 BY MR. GALLIK:
 18 Q Why don't you go ahead and take the -- do you
 19 have another color?
 20 MS. OSTBY: Red. We can do red.
 21 BY MR. GALLIK:
 22 Q Yeah. If you could circle that?
 23 A (Complied with request.)
 24 Q Okay. And if you could make a notation on the
 25 bottom, that would be EPU-69.

1 A It is or was a producing well, oil well.
 2 Q Okay. And I recognize your testimony is that you
 3 have not personally seen the saltwater leak referred
 4 to in the report. My question is this, though.
 5 That's an oil or was an oil producing well and not a
 6 saltwater disposal well?
 7 A (Nodded head affirmatively.)
 8 Q Assuming that it was, that saltwater was leaking
 9 at the wellhead, what possible reasons could exist for
 10 saltwater to be leaking at the wellhead?
 11 A Corroded connection or corroded valve that would
 12 allow a seepage or a leak.
 13 Q And that saltwater would be coming from a
 14 formation below the surface?
 15 A More than likely, yes.
 16 Q Okay. And in order for that saltwater to reach
 17 the surface, does it travel up the inside of the
 18 casing or the outside of the casing or do both?
 19 A Inside the casing.
 20 Q Okay. Have you personally seen, in your
 21 experience, producing wells with saltwater leaks at
 22 the wellhead?
 23 A Have I personally seen them? Yes.
 24 Q Okay. And again, this will reflect my lack of
 25 knowledge about producing wells, but when you're

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1 A (Complied with request.)
 2 Q EPU-69, is that an oil well or a saltwater well?
 3 What is that?
 4 A It should be a producing -- or would have been a
 5 producing oil well, to the best of my knowledge.
 6 Q Okay. Did Murphy have any knowledge of this
 7 apparent saltwater leak at well EPU-69?
 8 A That, I don't know.
 9 Q Okay. So you don't know how Murphy responded to
 10 that particular --
 11 A We would have stopped the leak.
 12 Q Okay.
 13 A But whether we had any prior knowledge, I don't
 14 know.
 15 MR. GALLIK: Do you want to take a break?
 16 MS. OSTBY: I can just stand up.
 17 (Recess taken from 14:40:08 to 14:48:14.)
 18 BY MR. GALLIK:
 19 Q When we took a break, we were talking about, and
 20 you had circled, EPU-69, is that correct?
 21 A That's correct.
 22 Q And you circled that in red on Exhibit 51?
 23 A Yes.
 24 Q Okay. And that, as I understand it, is a
 25 producing oil well?

1 producing oil, let's say, coming -- up through the
 2 casing, I take it; is that correct?
 3 A Up the tubing, technically.
 4 Q -- up the tubing, how does the saltwater, if it's
 5 leaking at the wellhead, how does that saltwater find
 6 its way to the surface?
 7 A It comes up through the tubing.
 8 Q Along with the oil?
 9 A Along with the oil.
 10 Q Okay. And so when it's leaking, if someone says
 11 it's an apparent saltwater leak, would the water look
 12 to be oily, or how would a person know that that's not
 13 just an oil leak?
 14 A If it appears to be a saltwater leak, many times
 15 you have some deposition of salt along that or with
 16 that leak.
 17 Q I see. So it could be a dark-colored fluid
 18 with --
 19 A I can't answer that. I mean, I don't know.
 20 Q I'm just -- I guess I'm trying to understand your
 21 answer there. If it has composition to it?
 22 A Let me define "saltwater."
 23 Q Sure.
 24 A Saltwater is much like freshwater. It has very
 25 little color to it. The salt has no real color. But

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1 in a leak with normal evaporation, especially a small
 2 leak or a seepage, which he's talking about, or my
 3 interpretation of what he's talking about, you have
 4 evaporation of the water which then leaves a white
 5 residue which appears to be a salt. It may be
 6 chloride. It may be, you know, some other type of
 7 salt. May be sodium chloride, different type of salt,
 8 naturally occurring salts in this area. But, I mean,
 9 I would interpret from his statement that he saw
 10 something in evidence that would indicate to him that
 11 it was a saltwater leak.
 12 Q And where I'm confused is if you have both oil
 13 and water, saltwater, coming up the same tube, does
 14 the oil, if there's a leak, evaporate, too?
 15 A It can, yes.
 16 Q Okay. And so it could have been that the
 17 saltwater was part of the oil mixture and then --
 18 A Could have been part of the oil mixture, or it
 19 could have been that the oil content in this water is
 20 extremely low or nonexistent --
 21 Q Okay.
 22 A -- as these wells have a tendency to produce at
 23 fairly high, currently, concentrations of or
 24 percentage of water versus oil.
 25 Q In other words, a higher percentage of water

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1 versus oil?
 2 A That's correct.
 3 Q Okay. Turning again to Exhibit 62, page 10,
 4 Section 5.9 concerning pits?
 5 A Okay.
 6 Q If you could read that paragraph? It spills onto
 7 page 11.
 8 (Pause.)
 9 THE DEPONENT: Okay.
 10 BY MR. GALLIK:
 11 Q Okay. First of all, it talks about "the pits at
 12 the South Central Saltwater Disposal and Saltwater
 13 Disposal Station 1-D have no or partial netting."
 14 What is netting?
 15 A Pits are required, in this area, to have a
 16 netting to keep migratory birds from landing in the
 17 pits.
 18 Q Okay. And apparently these did not have or did
 19 not have complete netting?
 20 A That's correct.
 21 Q And was that something, to your knowledge, that
 22 Murphy addressed following receipt of this report?
 23 A Yes. We were already addressing it.
 24 Q Okay. It goes on to state at the bottom of
 25 page 10 that, "The pits at EPU-60 and EPU-23 have

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1 sludge in the pit, but are either not lined, fenced,
 2 or netted." The question I have is -- there's a lot
 3 in that sentence. Do you know which pit was not
 4 lined?
 5 A No, I do not.
 6 Q It goes on to state that the McGowan battery is
 7 neither lined nor netted. Have you looked at the
 8 McGowan battery pit?
 9 A To the best of my recollection, I may have.
 10 Q And this report indicates that it's not lined.
 11 By "lining," again, are we talking about the synthetic
 12 material that we had talked about earlier in your
 13 deposition?
 14 A That would be a supposition on my part, that he's
 15 talking about a synthetic liner.
 16 Q Or it could be a clay liner?
 17 A Could be a clay liner, but I think he's probably
 18 referring to -- and the only way you would know is ask
 19 him. But visually the only way you would tell if
 20 there's a liner is if you saw a synthetic liner.
 21 Q And is there a synthetic liner, to your
 22 knowledge, on the McGowan battery?
 23 A To my knowledge, no.
 24 Q And where, on this map, is the McGowan battery
 25 pit that is not lined?

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1 MS. OSTBY: He said not lined with a
 2 synthetic liner.
 3 MR. GALLIK: Yeah.
 4 THE DEPONENT: Yeah.
 5 (Pause.)
 6 BY MR. GALLIK:
 7 Q You can go ahead and use the blue thin pen to
 8 circle that. It's in the upper left-hand corner of
 9 Exhibit 51, correct?
 10 A Yes, probably 10 miles from the plaintiffs' area.
 11 Q In response to --
 12 A And let me just state that the McGowan pit as he
 13 defined it is not an active pit as we've defined
 14 earlier as a saltwater disposal pit. It's not even an
 15 emergency overflow pit. There were some burn pits up
 16 in this area where we -- there is some gas produced up
 17 in the northwest part of the field, and that gas
 18 coming off the treaters is carried to a pit where we
 19 can flare that gas rather than bin it because it
 20 contains trace amounts of H2S.
 21 Q Did Murphy, to your knowledge, respond to any of
 22 the concerns regarding pits aside from the netting
 23 that we talked about earlier in your deposition?
 24 A I don't have any knowledge that we did, no.
 25 Q Okay. One final question. If you could turn

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1 back to your answers to Interrogatory 63? Turn to
 2 page 8.
 3 A Yes, sir.
 4 Q List the Murphy employees who have been involved
 5 in disposal activities. Do you see that list there?
 6 A Yes, sir.
 7 Q Do you know these people aside from Mr. Reede and
 8 Mr. Trottier, who is no longer alive?
 9 A Yes, sir.
 10 Q To your knowledge, are these people still in the
 11 Poplar area?
 12 A Yes, Jim Corne is still in the Poplar area.
 13 Q Is he still an employee of Murphy?
 14 A He is a contract employee of Murphy.
 15 Q Okay. How about Mr. Grainger?
 16 A Yes, he is an employee of Murphy.
 17 Q How about Mr. Ross?
 18 A Yes, an employee of Murphy.
 19 Q And how about Mr. Hagadone?
 20 A Retired, still living in Poplar.
 21 MR. GALLIK: Okay. Thank you. I don't have
 22 any further questions.
 23 THE DEPONENT: Thank you.
 24 MR. ROSS: No questions.
 25 MR. KUCERA: Let me state for the record on

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1 behalf of Bestway that we've appeared at the
 2 deposition today having been recently entered in the
 3 lawsuit. We have no questions at this time. It's our
 4 position we're reserving questions since we have not
 5 had an opportunity to review any discovery or to see
 6 any documents. Thank you.
 7 MR. MURPHY: No questions.
 8 MR. COLEMAN: None here, either.
 9 (The deposition was concluded at 15:00:50.)
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DEPONENT'S CERTIFICATE

I, Sidney W. Campbell, do hereby certify
that I have read the foregoing 170 pages of
typewritten material and that the same is, with any
changes noted below, a full, true, and correct
transcript of my oral deposition given at the time and
place hereinbefore mentioned.

PAGE	LINE	CORRECTION	REASON FOR CORRECTION
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Sidney W. Campbell

Subscribed and sworn to before me this _____
day of _____, 2001.

Notary Public
For the State of _____
Residing at _____

(Seal)

My commission expires:
_____.

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REPORTER'S CERTIFICATE


I, JoAnn C. Bacheller, a Registered Diplomat Reporter and Certified Realtime Reporter, certify that the deponent, Sidney W. Campbell, was first duly sworn by me to testify the truth; that I was then and there authorized to administer an oath; that his deposition was reported by me in machine shorthand and thereafter reduced to typewriting using computer-assisted transcription; that after being reduced to typewriting, the original of this transcript was retained by the reporter and a copy mailed to the deponent for his examination and signature; and that this is a true and correct record of the testimony given by said deponent.

I further certify that I am not attorney for, nor employed by, nor related to any of the parties or attorneys to this action, nor financially interested in the action.

IN WITNESS WHEREOF, I have set my hand and seal at Billings, Montana this 16th day of July, 2001.

(Seal)

My commission
expires 9/20/04.


JoAnn C. Bacheller
Registered Diplomat Reporter
Certified Realtime Reporter
Notary Public for the
State of Montana

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